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THESIS

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AN APPLICATION

Richard Bray Renner

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Information Requirements Analysis: An Application

by

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ABSTRACT

This research applied the methodology of Structured Systems Analysis to the information requirements of the Department of Administrative Sciences of the Naval Postgraduate School. It reviewed all flows of information to and from the Department and showed that even though, in the aggregate, the requirements seem amazingly complex, the analysis can be structured in a sensible, methodical system. The author also recommends several relational data bases and internal reports to support the Department's information requirements, as well as recommending that the analysis approach be adapted throughout the university.

TABLE OF CONTENTS

FIGURES

I. BACKGROUND

The Administrative Sciences Department is the organizational home of the management faculty at the Naval Postgraduate School. The Department, as it will be known hereafter, employs 61 professionals, both civilian and military, comprising 28 different academic disciplines. Its eleven graduate programs have produced almost 4000 graduates in its 22 year history, averaging approximately 300 students enrolled at any one time throughout the year. The major fields of management that are supported by the Department are:

Financial,
Information Systems,
Logistics,
Manpower/Personnel/Training,
Organizational Development, and
Telecommunications Systems.

In addition to their educational responsibilities, Department faculty have research responsibilities as well. At the time of this writing, 43 different research accounts from 18 separate sponsors are active within the Department with a total budget of $2,121,497.

As the Department evolved and its information needs became more complex, each new requirement was approached by an understaffed administration on an adhoc basis without adequate

consideration of information integration. All requirements, both external to the Department and for internal efficiency, were fulfilled, but with the use of considerable manpower. Within an information-intensive organization, this approach is costly and inefficient. This is not to say that this example is an isolated one. A Stanford Research Institute study reported that during the 1960's, industrial productivity in the United States increased by 83%, while "knowledge workers'" productivity rose only 4% [Ref. 1]. The knowledge workers of the Department needed help. They need, not only more efficient methods of storing and organizing data, but a comprehensive system to manage information.[1] In fact, even with the myriad of technological advancements today, the greatest potential of today's information systems is the synergy of increasingly profound integration [Ref. 2]; in other words, the co-ordinated application of all the tools of modern information technology could be of enormous benefit to the Department. This study is the first step of an integrated, systems analysis of the Department's information requirements and will be used as the framework for the actual design of the system of automated and manual information "flows."[2]

This chapter has given the reader an appreciation of the background that has given impetus to this study. The analysis methodology will be discussed in the next chapter, "An Overview to Structured Systems Analysis," and the global view of the Department's proposed information system will be examined in the following chapter, "The Context Diagram."

II. AN OVERVIEW OF STRUCTURED SYSTEMS ANALYSIS

This chapter will present to the first-time reader of Structured Systems Analysis concepts a brief, but insightful, overview of a discipline of "compelling elegance" [Ref. 3]. First, the problems that can be expected to be encountered during the analysis phase will be examined. Following that, the discussion of the nature of structured analysis will be divided into several sections. The first two sections cover the tools and procedures of Structured Analysis. Then, finally, the author sketches the characteristics and the qualities of a document DeMarco [Ref. 4] calls "the Target Document." After this brief journey, the reader will be ready to explore the complexities of the next chapter, "The Context Diagram."

A. THE PROBLEMS OF ANALYSIS

If one pauses to reflect on the actual thought process that a systems analyst probably must use, one would believe that no sane person would undertake such a task. An analyst is expected to interview a functional user[3] in much less time than the user used to learn his job and then to describe the function so succintly that a third party can convert the description to a computer code. The traditional result, DeMarco [Ref. 5], over the past 20 years, has been a narrative that is

redundant, wordy, excessively physical[4], and tedious to read. If the analyst has enough courage to attempt to get the user[5] to verify that his narrative accurately models the function originally described, most users reject the technical language and, all too quickly, surrender their concurring signatures. Without fullfledged user concurrence, the analyst is taking a chance on not recording some subtleties that the user was convinced that he had explained in-depth and hence risking the ultimate acceptance of the information product, if not the system.

Another handicap facing most seasoned analysts is that they have matured in the Automated Data Processing environment and view functions via traditional methods, i.e., keypunch, magnetic tapes, and listings of computer print-out. The second likely pitfall, then, is a too rigid description by the analyst of essentially minor details, such as whether a file will be constructed with pointers or as a relational data base[6]. The number and type of characters, for instance, used in a name of an item is not very important at the time that the analyst should be concentrating on first defining that item.

How should, then, an analyst proceed to describe a function? That is what will be described next by looking at the nature of structured analysis.

B. THE NATURE OF STRUCTURED ANALYSIS

The primary reason for structured analysis (SA) is that it has been found effective in minimizing the probability of the

analysis errors which were described in the previous section [Ref. 6]. The analyst concentrates first in obtaining user concurrence in describing the actual physical flow of the data. The flow is defined graphically, not in standard ADP flow-charting symbols, (which can be frightening to the un-tutored), but in relatively simple symbolism: circles, lines, boxes, which are all, for the most part, labeled with functionally descriptive names. The analyst defers talking about any control points—how decisions about the data are made—at this time, merely describing the physical journey "from the viewpoint of the data" [Ref. 7], i.e., "John sends form A to Mary, who files the 3rd copy, and then she sends the other two copies to Ed."

From this point, the analyst does two things:

1. shifts from a physical description to a logical one, i.e., "The form enters the 'system', is recorded in a history file, and then the customer's credit rating is checked.";

2. begins to subdivide, or partition, each function into its component parts. Function number two, for instance, could have two components, e.g., 2.1 and 2.2. Function 2.1 possibly may consist of many components itself, i.e., 2.1.1, 2.1.2, etc. Throughout this second phase, the analyst must ensure that the user concurs with the logical description and its subsequent partitioning.

Another benefit of starting with a global, or top-down, view and moving to lower, partitioned levels is that changes

are easier to make. How do changes come about? Here are some obvious reasons, though not an exhaustive list:

1. The analyst could have made a mistake in describing the data flow.

2. During the analysis time period a new requirement may be defined, i.e., a new report is required.

3. The user may suggest an enhancement, i.e., "I've always wanted to measure how long it takes us to do that, but it was always too much trouble."

It definitely is much easier to make such a change at that time then after the new system[7] has been implemented [Ref. 8].

Finally, after all the partitioning has been completed, the analyst is ready to describe the processes that actually accomplish the work. This set of description, or mini-specifications, is the heart of the Target Document (see above) that DeMarco recommends[8].

In summary, the major features of Structured Analysis are [Ref. 9]:

1. Graphics are used whenever possible;
2. the system must be partitioned;
3. differentiation is made between the physical and the logical models of the system;
4. the Target Document must be easy to change, and
5. the user must concur with the logical system model[9].

Now to the specifics of Structured Analysis, the tools and the procedures will be expounded upon.

1. The Tools of Structured Analysis

The tools of Structured Analysis form a set of reasonably precise methods that enable the analyst to act as the interface between the user and the eventual system designer[10]. The reader may sense that the techniques described below are laborious and, to a degree, superfluous, but careful definition of functions and specifications in the beginning will markedly reduce the time spent later in introducing system corrections [Ref. 10]. The major tools are:

Data Flow Diagrams (DFD) are a graphical display of the functional travel of the data. See Figure 2-1. The reader should note some basic conventions of the diagrams:

(1) The data flows are represented by arrows, whose names are chosen to illustrate what is known about the packet of information that flows over that pipeline.

(2) The processes, represented by circles, transform data inputs into data outputs. Well chosen process names are those with active verbs and objects named in terms of the net effect of the transformation.

(3) Files, represented by straight lines, are just temporary repositories of data. Arrows flowing between the files and the processes show only the net flow.

(4) The data sources/sinks are shown by boxes. The same boxes may appear more than once in a Data Flow Diagram for clarification to avoid crossing lines.

The Data Dictionary actually documents the essential details that should be explained during the analysis phase. The dictionary consists of the following major sections:

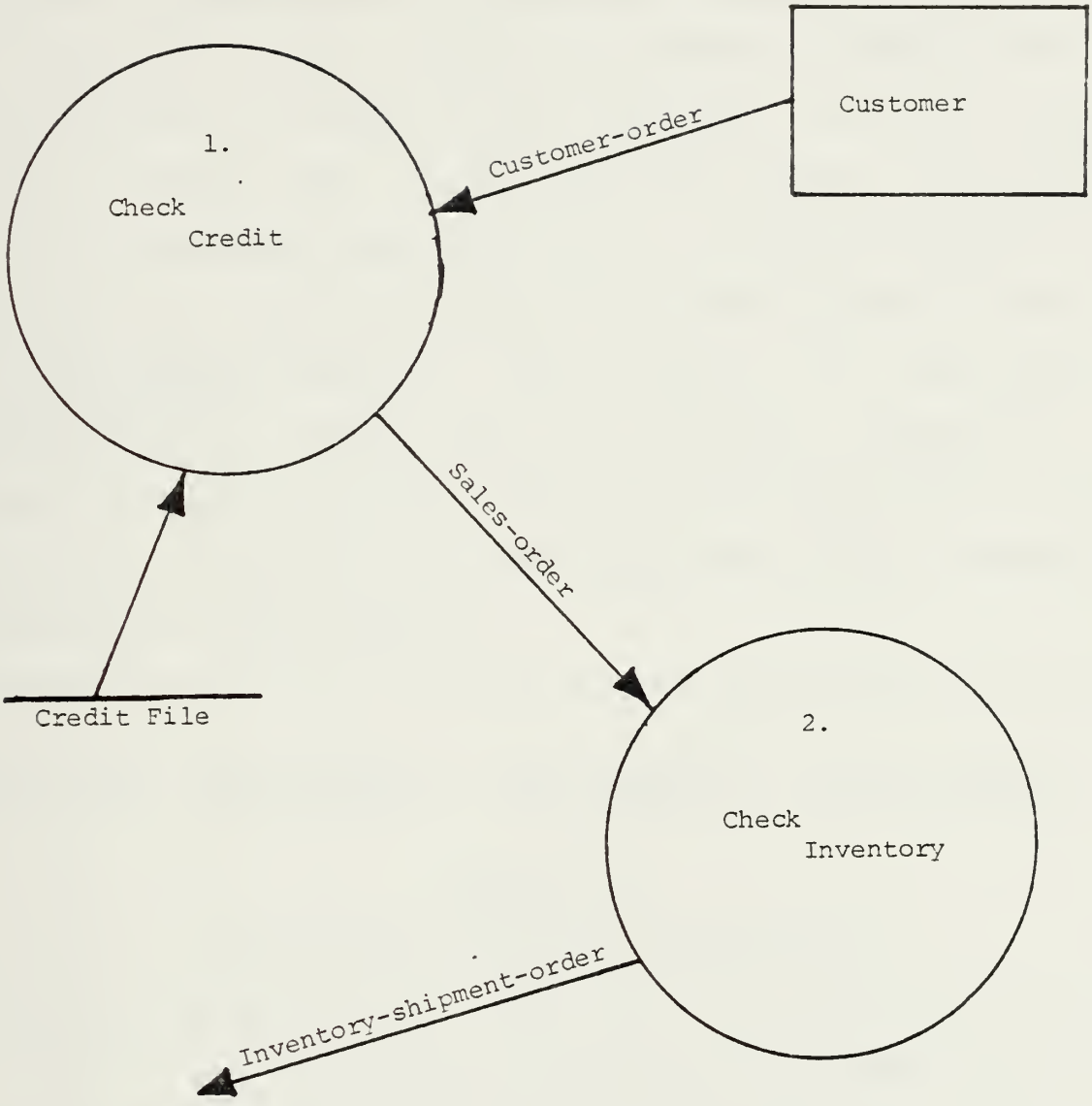

Figure 2-1

A Simplified Data Flow Diagram

(1) Data Flow Definitions define the specific data elements that are contained in the flow. Figure 2-2 is a simplified illustration. A more detailed discussion of the conventions and symbols of Structured Analysis is contained in Chapter V; however, it will be necessary to define the three symbols that appear in this overview. They are the plus sign, the equals sign, and the left/right braces. As part of the Data Dictionary, the plus sign (+) is used to symbolize an AND sequence; the equals sign (=) is used to symbolize the IS EQUIVALENT TO sequence; and the braces ({}) symbolize ITERATIONS OF an element from 1 to infinity[11]. Therefore, Figure 2-2 should be read, "The data flow named 'data-flow' is equivalent to data-element1 AND data-element2 AND a number of iterations of data-element3.

DATA-FLOW = DATA-ELEMENT1 + DATA-ELEMENT2 + (DATA-ELEMENT3)

Figure 2-2

A Simplified Data Flow Definition

---

(2) Data Element Definitions describe the exact meaning and, usually, the range of values that the element can take. It is not necessary to fix the alpha-numeric construction of the element, at this time; however, that task can be safely deferred until the design phase. Figure 2-3 is an example of a Data Element definition.

(3) File Descriptions list each Data Element that resides in the file and show how each individual record could be retrieved. For instance, a file of students may have as a primary key the last name, but may have secondary keys of social security number and religion. Therefore, an

DATA ELEMENT DEFINITION: FULL-NAME
ALIASES: NAME
FULL-NAME = FIRST-NAME + MIDDLE-NAME + LAST-NAME
NOTES: TELEPHONE-FILE SCHOOL-LIST DATA FLOW

Figure 2-3

A Simplified Data Element Definition

inquiror could search for an individual record by asking for a specific last name or social security number and could also get a list of all students in the file who are Buddhists, for example. Figure 2-4 gives an example of a file description.

(4) Process Descriptions look at what is being accomplished in each bubble of the Data Flow Diagram (see

Figure 2-1) and describes transformation in a manner that is designed to minimize misinterpretation. Appendix A, the Data

```
PERSONNEL-FILE = FULL-NAME + ADDRESS + CITY + STATE + ZIP +
                 TELEPHONE NUMBER
```

Figure 2-4

A Simplified File Description

```
PROCESS NAME:                    CUSTOMER-CREDIT-CHECK

PROCESS DESCRIPTION:
    FOR EACH CUSTOMER-ORDER
        IF VALUE GREATER THAN $50
            ACCESS CREDIT-FILE
                IF CUSTOMER APPROVED
                    PREPARE SALES-ORDER
                ELSE REFER TO CREDIT MANAGER
            ELSE PREPARE SALES ORDER
```

Figure 2-5

A Simplified Process Description

Dictionary utilizes Structured English, although DeMarco suggests decision trees and decision tables as alternatives [Ref. 12]. Figure 2-5 illustrates a process description.

The tools of Structured Analysis have been examined in some detail with a few illustrations. More concrete examples from this study will be displayed in Chapter V, as well as in Appendix A, the Data Dictionary. Now the reader will cover the general procedures of Structured Analysis.

2. The Procedures of Structured Analysis

The general procedures for the conduct of Structured Analysis have five components [Ref. 13]:

(a) The Current Physical Data Flow - the first the analyst must do is to find out what is being done. The owner and the responsible user should be queried, but there is no substitute for sitting down with the hands-on user(s) to really "feel" the action. If all three levels of users can define the flows consistently, then the analyst may feel relatively confident that the analysis debriefs[12] will be uncomplicated.

(b) The Current Logical Flow - here the analyst deletes the physical nature of the flows and describes what is being done logically. The analyst neglects, purposefully, to mention how it is being accomplished. There may be a variety of reasons for the manner of completing a function, not the least of which may be historical, i.e., "That's the way we've always done it," or political, i.e., "The boss likes this format." The logical reasons for the data flow have to be evaluated. It may be very difficult also because various elements of the organization may have never stopped to analyze the function before.

(c) The New Logical Data Flow - this is the stage that the analyst has been driving towards because some creativity can be shown in shaping the logic of the new environment. DeMarco [Ref. 14] gives some excellent examples of the type of conceptual redesign that can be done, but he does not give a recipe.

(d) The New Physical Data Flow - from the new logical flow, the analyst then settles down to describing the physical facts of the new system.

(e) The Structured System Specification - this step packages the New Physical Flow Diagram with the supporting documentation and presents the blueprint for implementation.[13]

Now that the reader is familiar with the tools and the procedures of Structured Analysis, it is time to discuss briefly the qualities and characteristics of the Target Document.

3. The Characteristics and Qualities of the Target Document

The end product of this Structured Analysis is this Target Document. What is it and how can good ones be recognized? The reader may know by now that the Target Document contains Data Flow Diagrams and a Data Dictionary, but the key word to remember is:

INTEGRATED.

The Target Document that is a product of quality must be an integrated set of diagrams and definitions of a functional system. It must be:

(a) Graphic - the pictorial representations must be ones that the analyst, the user, and the system designer can easily acknowledge the true model of the system.

(b) Partitioned - it may not be possible for each partitioned component to truly stand alone. In most systems, it seems, that need analysis, the interactions between components are complex, and some linkage will always be evident. However, a successful partition will give the reader confidence that all the logical elements are exhibited within the segment.

(c) Rigorous - the data flows and the files will be defined precisely. The Data Elements will show definite meanings and, in some cases, a precise alpha-numeric construction. The data transformations, the Process Descriptions, have firm descriptions of the operation, but, in the analysis phase, the specific algorithmic routine need not be outlined.

(d) Maintainable - corrections and improvements can be made to the Target Document easily and with little cost. This quality is achieved by the partitioning and the decomposing. Individual functions can be "surgically" isolated while the change is being accomplished. A secondary benefit of this maintainability is that changes can easily be evaluated, at any stage of the analysis or design to determine the extent of the effort needed to effect the change.

(e) Logical - removing the elements that depend on the physical characteristics of the system allows the analyst/designer to concentrate on only the important issues that need be addressed during each phase.

Eventually, the system designer will take this Target Document that has been constructed and decide to use it as a blueprint to build a system. That person is the Systems Designer that has been so casually mentioned during the previous discussion.

4. The Systems Designer

The Systems Designer must take the framework of the Target Document and perform two major functions. The designer must:

(a) decide what functions shall be automated and what will continue to be performed in the "old way." Numerous texts, such as Fitzgerald [Ref. 15], present techniques to weigh the decision, i.e., volume of throughout, file retrieval frequencies, etc. This author suggests that it is easier to stop an automated function from being performed and to "slide back" to a manual operation than it is to go back to incorporate a function after a system has been implemented. Experiment with functions that may seem to have a low return on automation. The use may grow as the user develops a facility for its performance.

(b) prescribe with more rigidity the structure of the data elements, the files, and the operating algorithms.

C. SUMMARY

This chapter has briefly introduced to the reader the concept of Structured Systems Analysis and the problems involved with its successful completion. The examination of the tools and procedures of Structured Analysis were followed by a

discussion of characteristics and the exemplary qualities of the Target Document. Finally, the important duties of the systems designer were highlighted. The next chapters will discuss the actual target document for the Department.

III. THE CONTEXT DIAGRAM

In the previous chapter, the general nature of Structured Analysis was described. The major highlights consisted of avoiding detailed naratives, partitioning the major functions, and then transitioning from the global view of the "system" smoothly down through various levels of detail until the operations could be defined logically in the terms of specific processes that cannot be further decomposed. This bottom level DeMarco labels "functional primitives" [Ref.16]. This concept of transitioning, or leveling[14], allows us to decompose a system gradually showing only enough of a system on a single page that a user or a designer could realistically grasp. Eventually with careful and thoughtful decomposition, a leveled set of Data Flow Diagrams will result. Figure 3-1, a reproduction of Figure 31 of DeMarco [Ref. 17], is a splendid example of a leveled decomposition.

The key to a good start in conducting the analysis is the Context Diagram--diagram 0 of the leveled set. It is the "de-partitioned", as it were[15], version of the entire system. The only purpose, but an important one, is to delineate the domain of the study [Ref. 18]. With this study, the Department, this may seem somewhat superluous, but, in actuality, the Context Diagram shows the set of data flows, in both directions, across the boundary of the system.

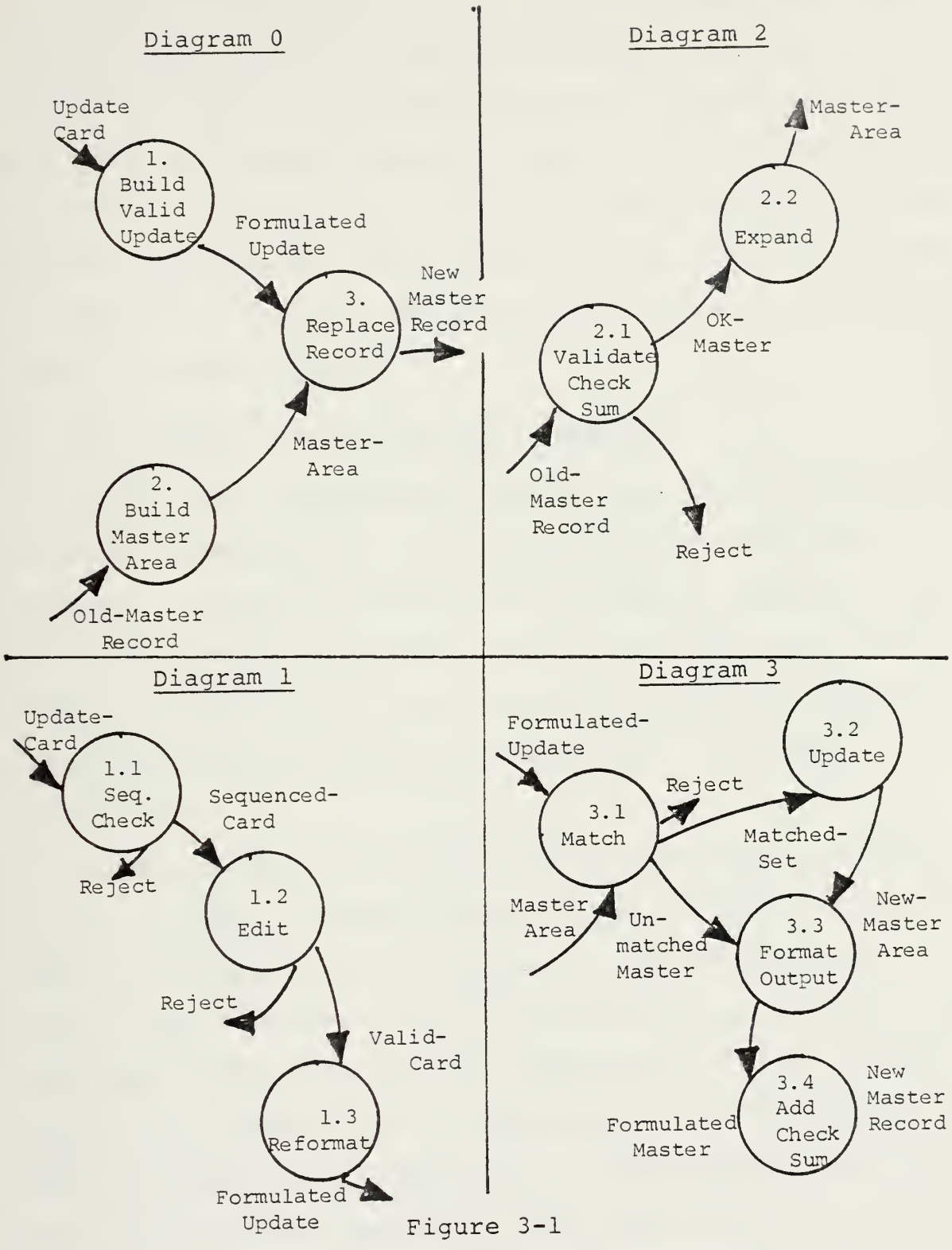

Figure 3-1

Leveled Decomposition

The principles, mechanics, and convention of the Data Flow Diagrams were outlined in the last chapter, but, as a reminder, Data Flow Diagrams are representations of packets of information flowing through a network. They are NOT a representation of a flow of control, nor do they activate any process. The process descriptions, which transform data, will be discussed in Chapter V. For now, the analysis will start at the top with the Context Diagram.

A. THE CONTEXT DIAGRAM FOR THE DEPARTMENT

Figure 3-2 is the Context Diagram that defines the domain of study, showing major data flows across the Department's boundary. The major sources/sinks[16] are all departments of the Naval Postgraduate School (NPS). No attempt was made to show the numerous ad hoc data retrievals that are necessary throughout the year to satisfy unplanned[17] information requirements.

Perhaps a few words on the composition of Level 0 are in order. Information about the Department's personnel resources enter the system from the northwest corner of the diagram. The Civilian Personnel Office and the Military Personnel Office introduce information about new employees and offer regular information updates about all personnel, so that the Department can verify the data in their file. Inter-action to the northeast of the Context Diagram are with the offices of the school that provide information concerning the academic requirements

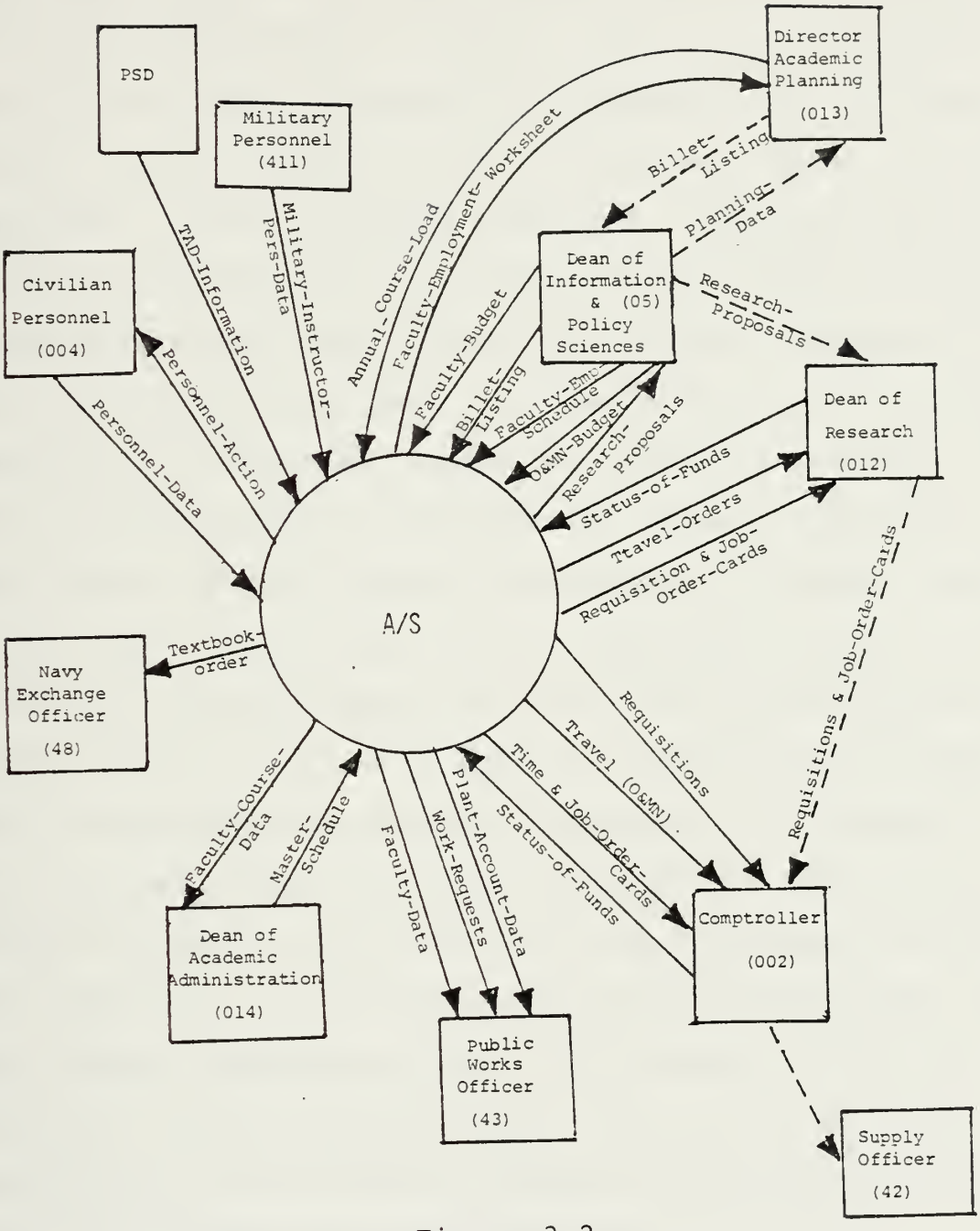

Figure 3-2

The Context Diagram

that the Department must fulfill, both teaching and research. The Director of Academic Planning informs the Department of the courses required for the current population of military officers, and the Dean of Research lists all the research projects for which the faculty is responsible. The Comptroller and the Dean of Research, also, are the interfaces with the Department for the financial resources. These offices relay the data about the funds for which the Department must account. Rounding out the circle are the Public Works Officer who is involved with the Department's property management. As the landlord for the school's departments, the Public Works Officer who is involved with the Department's property management. As the landlord for the school's departments, the Public Works Officer keeps track of the current custodian, as well as instituting all the maintenance and repairs for all the offices and working areas. The Dean of Academic Administration performs the scheduling of the courses, classrooms, and professors, as well as other student enrollment functions; while the Navy Exchange Officer is the procurer of the Department's textbooks. Also appearing on the Context Diagram are dashed lines--these show further interaction between the external offices that will eventually affect the Department. Now that the reader has an appreciation of the Context Diagram, he can proceed with the next step of decomposing the functions.

B. PARTITIONING[18] THE CONTEXT DIAGRAM

Previous chapters have discussed partitioning, or decomposing, the system into manageable abstractions from which to

continue the further break-down. This author has chosen the most straight-forward approach of designating three sub-categories:

1. personnel,
2. financial, and
3. property.

Figure 3-3 illustrates this alignment. Obviously, the categories are inter-related, or they would not be part of the same system. One cannot make some personnel decisions without a clear appreciation of the financial implications involved, nor should a financial decision be completed without weighing the property deficiencies facing the Department, both near and long-term.

However, decomposition is necessary to follow the precepts outlined above. In retrospect, it can be seen that it is the only realistic way to manage any analysis of a sizable system and to effectively keep track of any number of changes occurring during the analysis phase. The discussion proceeds to look at each section of the level one (Fig. 3-3) decomposition. Notice that the number of Data Flows and sources/sinks are the same from the Context Diagram[19]. The internal data flows are conceptual to the extent that they indicate a transition of management from one segment to the other. For instance, when a new employee enters the system, one must determine the financial account from which the person will be paid. The partition implies that the user transcend from the personnel "bubble" to

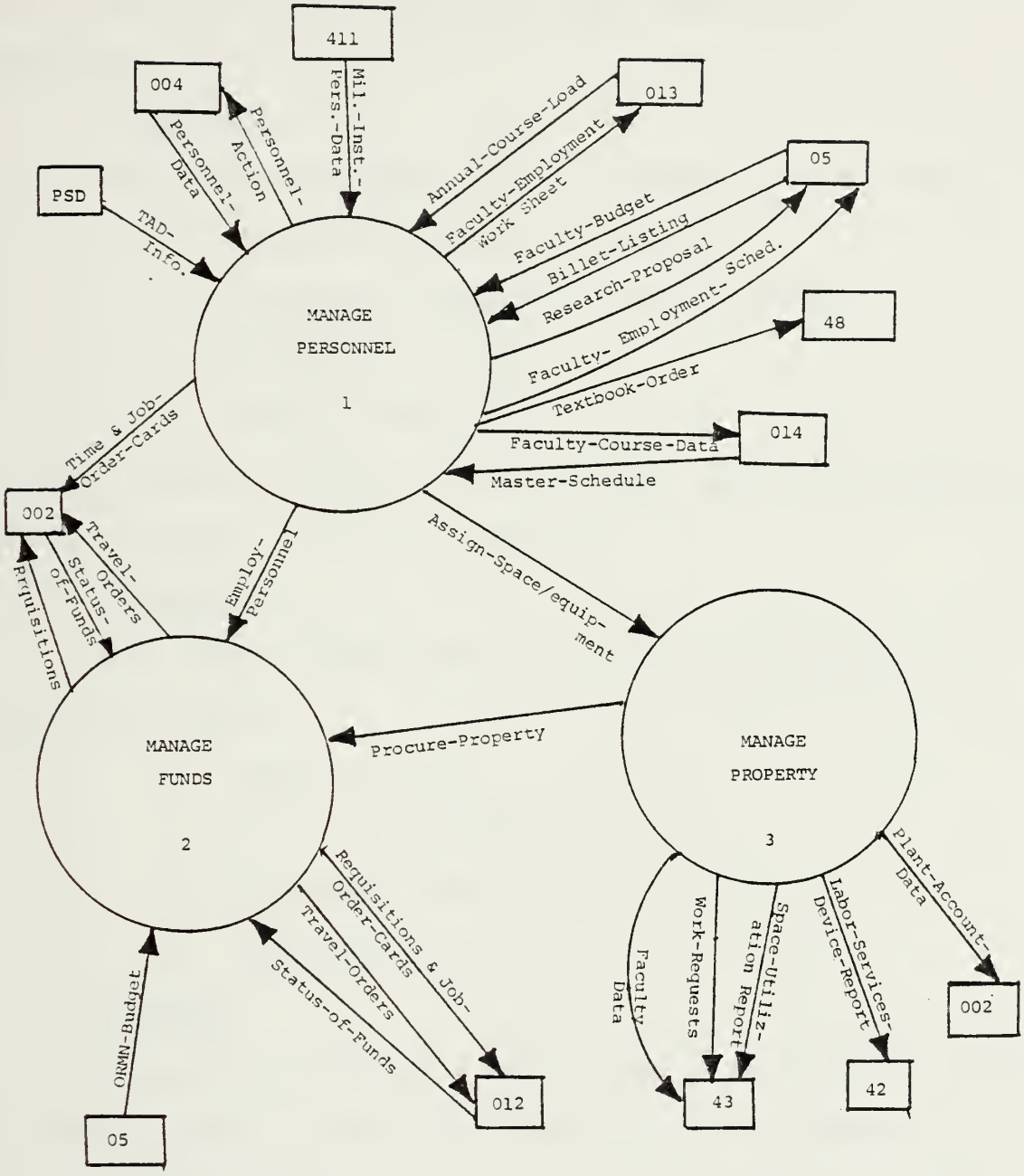

Figure 3-3

Level One Decomposition

the financial "bubble" to determine the adequacy of funds, and then returns to the personnel "bubble" to make the assignment. Now for a look at how the three functions will be decomposed.

1. Personnel

Personnel management will be viewed in four phases:

a. Updating personnel records[20],

b. Assigning personnel to work spaces,

c. Scheduling, and

d. Paying personnel.

For all these subdivisions, the pertinent data flow diagrams will be examined in the next chapter.

2. Financial

The financial management partitioning follows traditional lines also:

a. Receive funds,

b. Obligate funds[21],

c. Reconcile funds, and

d. Request funds.

3. Property

Property management appears even more straight-forward, but with implementation, there should be a conscientious effort to conduct an inventory of furniture and equipment. It is quite clear that the Department has managed exceedingly well for years without an exact knowledge of its inventory, but it would be unfathomable to implement an automated information

system that could not tell management the location and the value of its property. It is necessary, then, to dissect this function into three parts:

a. Acquire property[22],

b. Inventory (it), and

c. Dispose (of it).

C. SUMMARY

In this chapter, the Context Diagram, Figure 3-1, was reviewed, which enabled the reader to look at the domain of the study along with the external data flows. The author followed with a description of the partitioned segments that were chosen in order to proceed to the eventual definition of the "mini"-specifications. The associated Data Flow Diagrams for the lower levels will be discussed in the following chapter.

IV. DATA FLOW DIAGRAMS

Data flow diagrams are the most essential part of Structured Analysis because they form the basis for the analyst and the user agreement on the conceptual framework of the system. The labels and file layouts can always be changed[23], but because of the modularization, changes are not necessarily causes for exponential increases in re-design/re-programming efforts throughout. The previous chapter listed the three major partitions:

1. personnel,
2. financial, and
3. property.

Let the level two Data Flow Diagram be examined. Databases now start appearing, accessed by several processes at each level. New data flows may also start appearing if they are to be viewed as internal to the level one data flow.

A. LEVEL TWO DATA FLOWS

Figure 4-1 takes the personnel "bubble", number one, and creates four subsets:

1. Update personnel data—here the system takes notice of the new employee and any new personnel action that management may take.

2. Assign personnel—in this process, management concerns itself with the physical workspace of the employee.

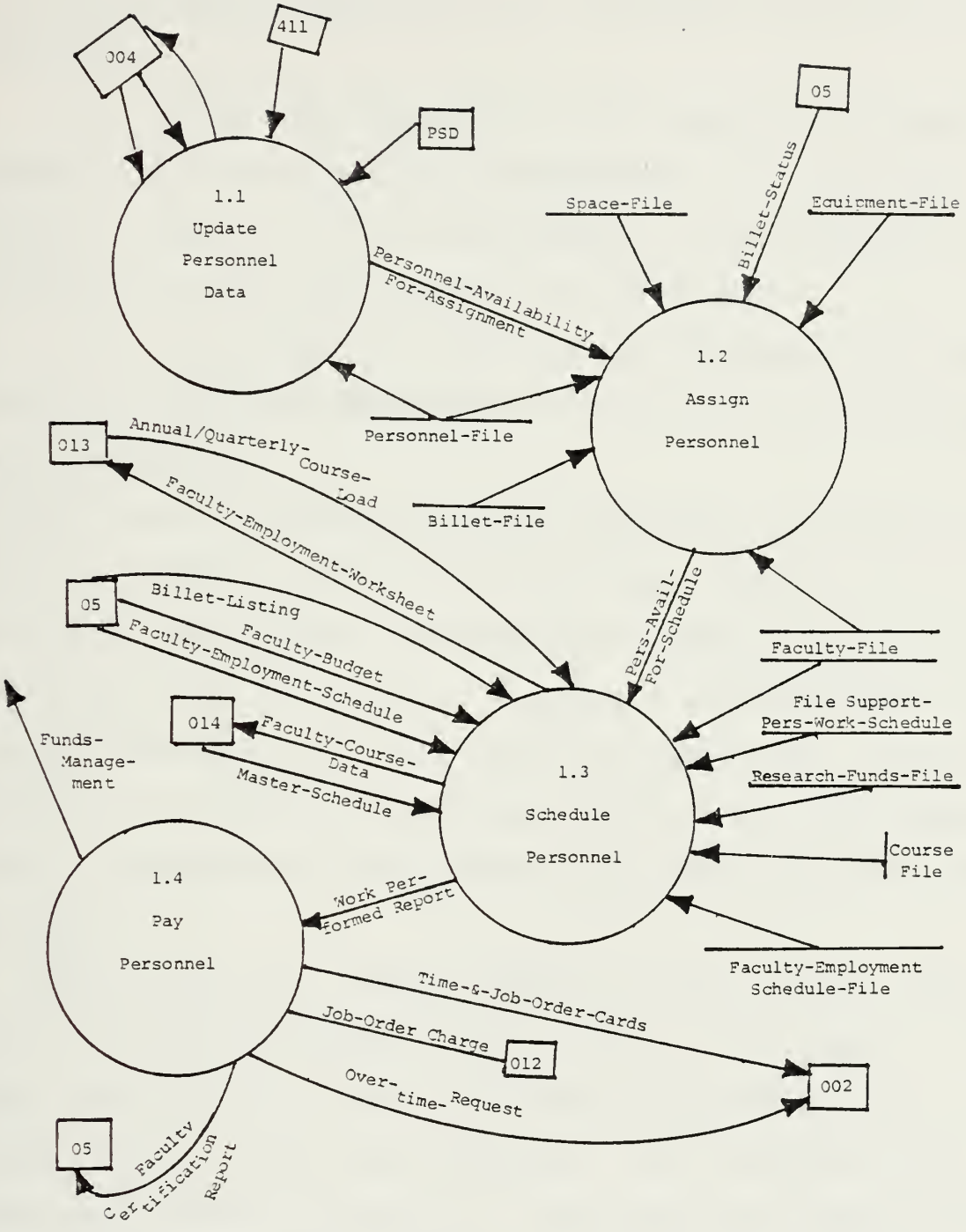

Figure 4-1

Level 2, Process 1

Workspace assignments are made, and management concerns itself with the furniture, equipment, and telephones available for the worker.

3. Schedule personnel—at this juncture, management selects the work periods for the employee. For the staff person, it may not be too complicated; for the faculty, it is a much more complicated process for scheduling.

4. Pay personnel—this process concerns itself with recording successful completion of the work effort that management has assigned.

As each level is decomposed, more components are added to the picture, seemingly making the picture more complex, but in actuality, the analyst is spreading the detail. Eventually, the lowest level will contain "bubbles", or operations, that are so fundamental that they cannot be subdivided. As each operation is expanded, the analyst keeps in mind the fundamental rule of decomposition—only show on one page a limited number of tasks[24].

Figure 4-2 takes "bubble" number two and gives us three new, re-numbered processes for the financial management process. New files are shown, and some new internal data flows are added. Most of these are conceptual. For instance, after the funds are received, Process 2.1, the Data Flow Diagram shows a data flow, "Expenditure Request." The data flow here is really some section of management telling a clerk to procure something. In a very large organization, this action could very

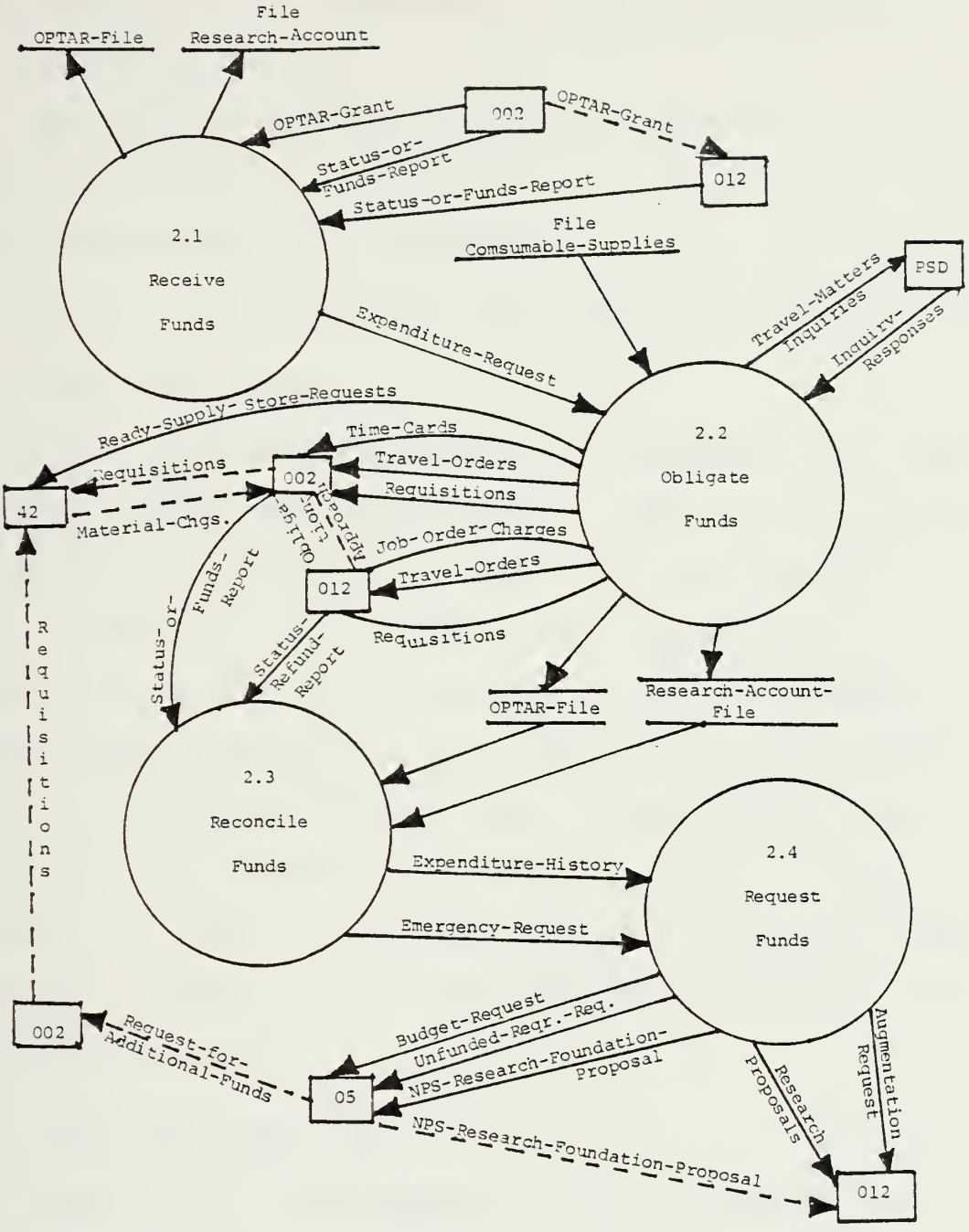

Figure 4-2

Level 2, Process 2

well take the form of a piece of paper moving from one desk to another. In the Department, it is more likely to be an informal communication.

The property management process is shown in its partitioned state in Figure 4-3. As the reader can readily see, most of the processes are still conceptual in nature. The functional primitives are, for the most part, left to succeeding levels.

B. LEVEL THREE DATA FLOWS

Level three data diagrams show considerable less complexity and less detail per process bubble. Each of the processes, except for one, will map directly to a functional primitive in the data dictionary. Figure 4-1, the personnel process, converts into four lower diagrams, Figures 4-4 through 4-7, respectively. Figure 4-2, the financial process, however, only needs to sub-divide two processes, "bubble" 2.3, reconcile funds and 2.4, request funds. This is shown in Figure 4-8 and Figure 4-9. Only one decomposition of the property segment is required. Figure 4-10 is the partitioning of process 3.2, inventory property.

C. LEVEL FOUR DATA FLOWS

There is only one decomposition to the fourth level, Figure 4-11, and that is from process 1.1.2——AMPLIFY PERSONNEL DATA. This takes the form of verifying the data in the PERSONNEL-FILE from the periodic personnel listing from the Civilian Personnel Office. From this junction, two other personnel tasks can occur:

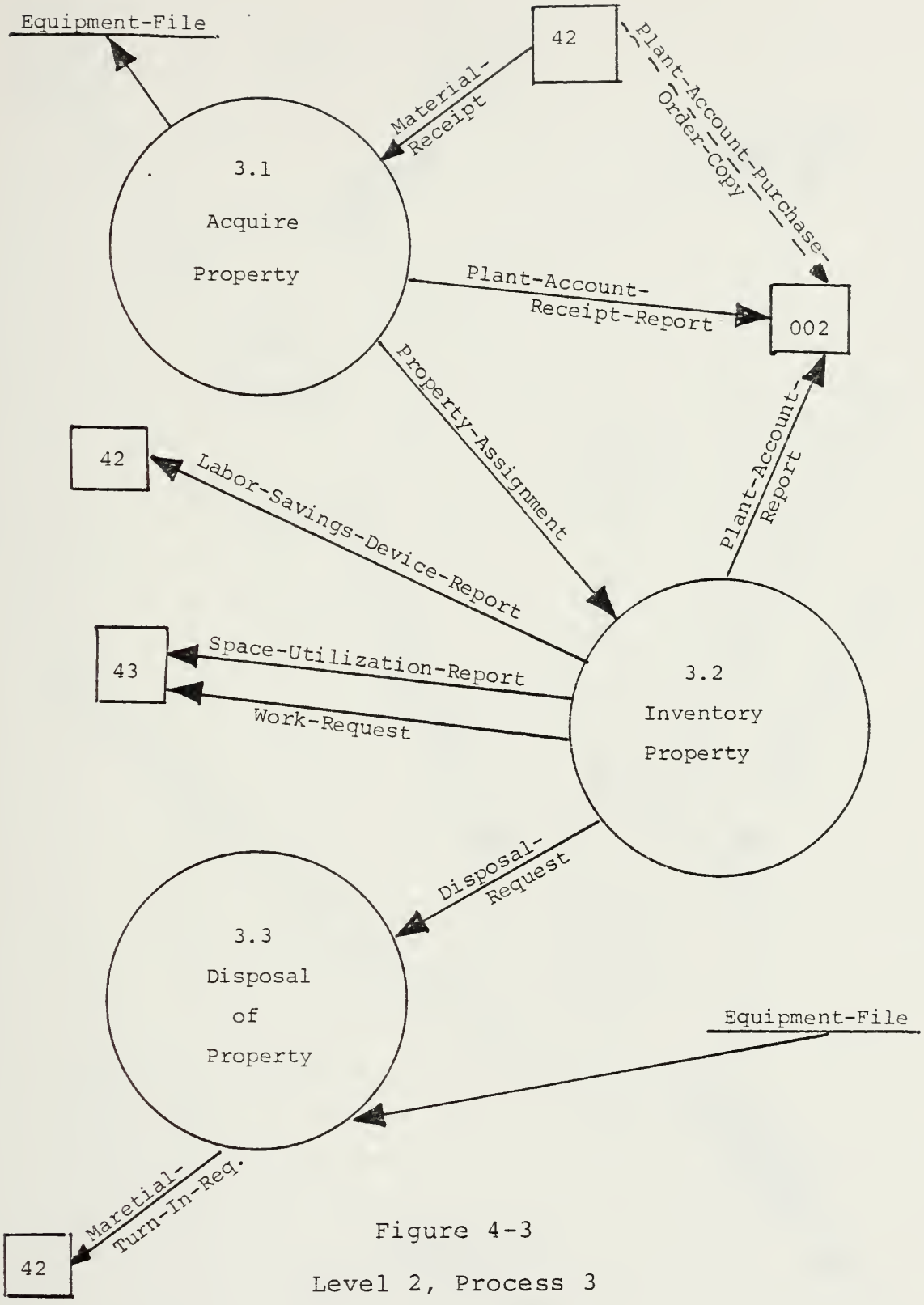

Figure 4-3

Level 2, Process 3

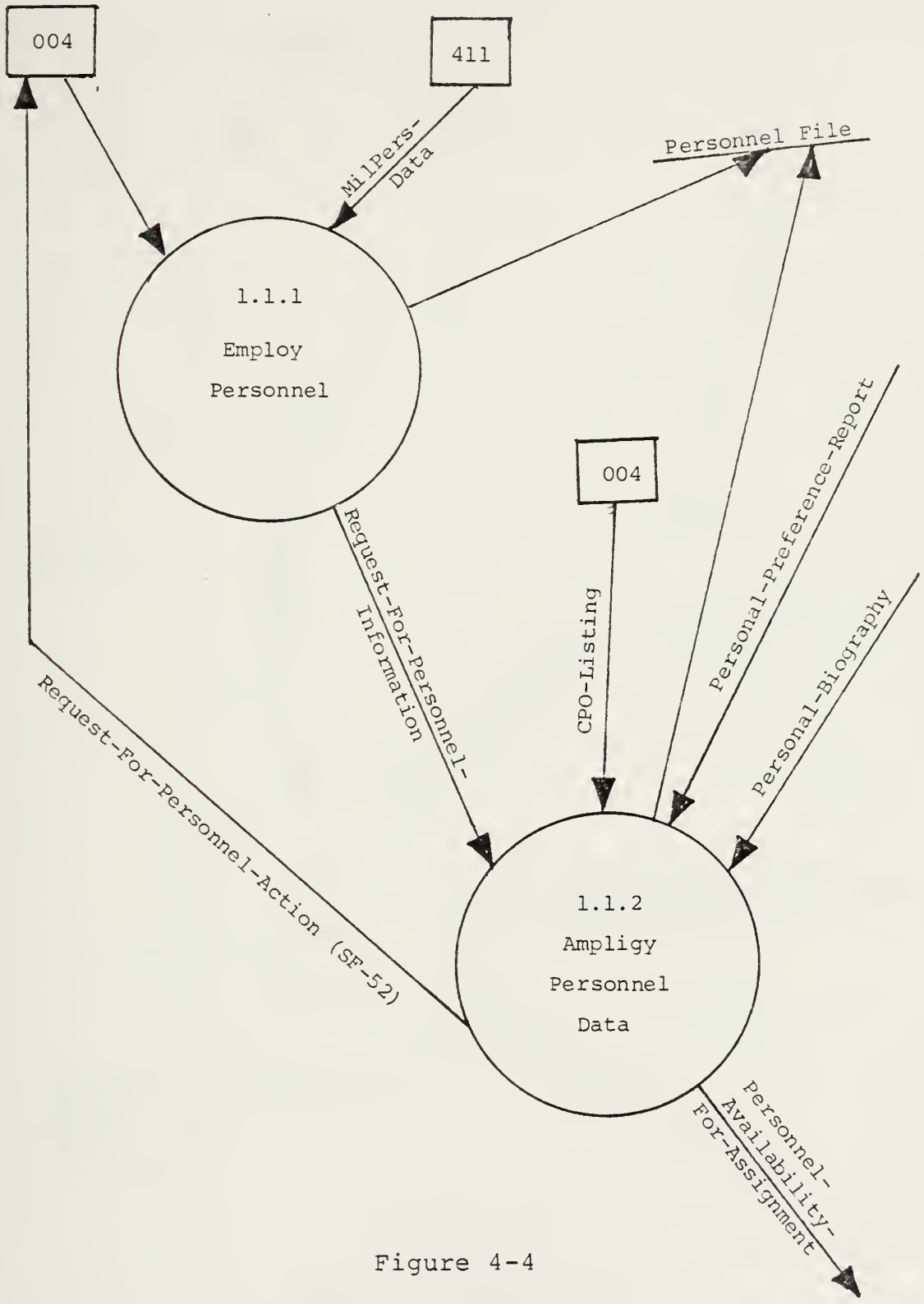

Figure 4-4

Level 3, Process 1.1

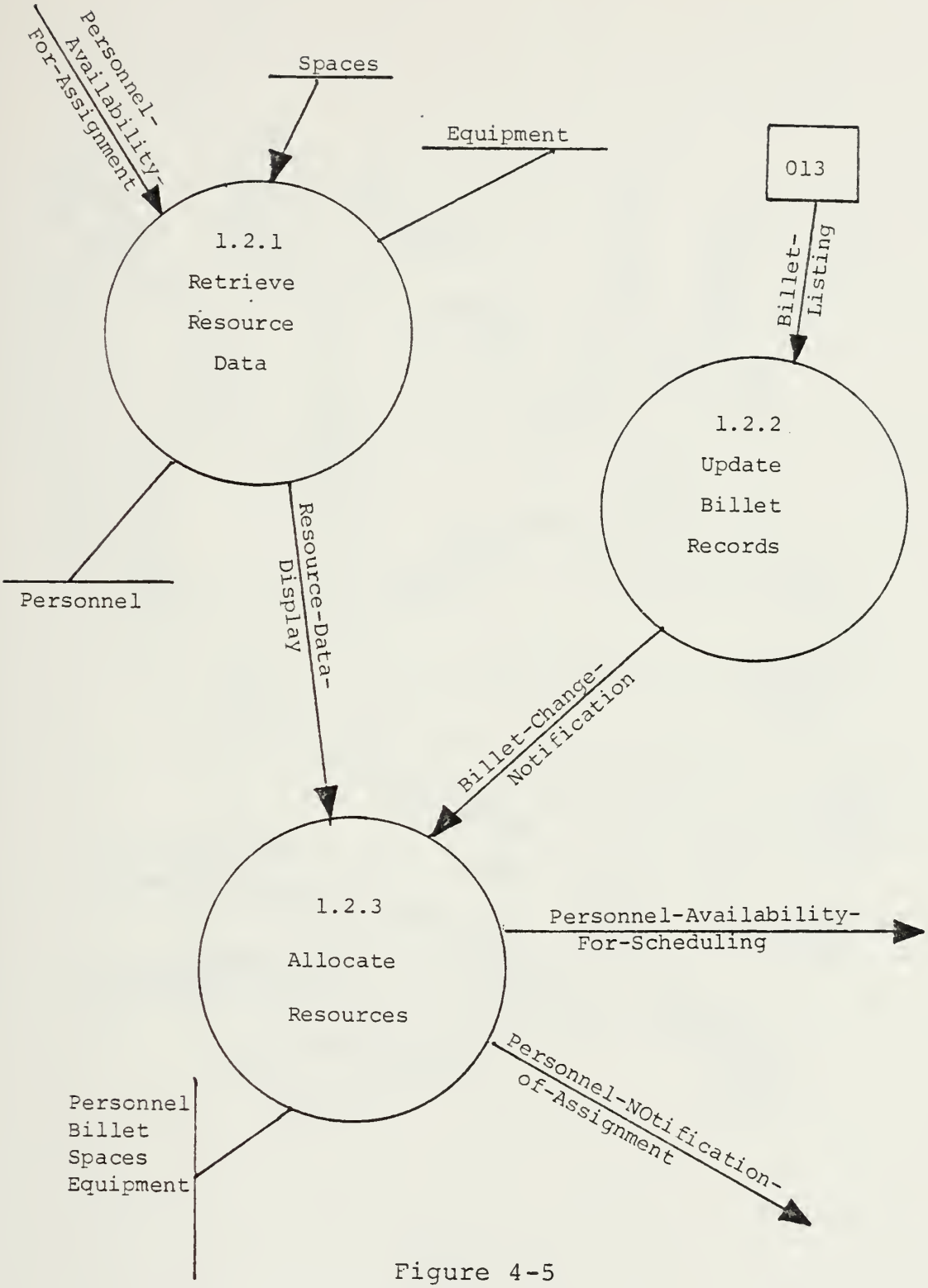

Figure 4-5

Level 3, Process 1.2

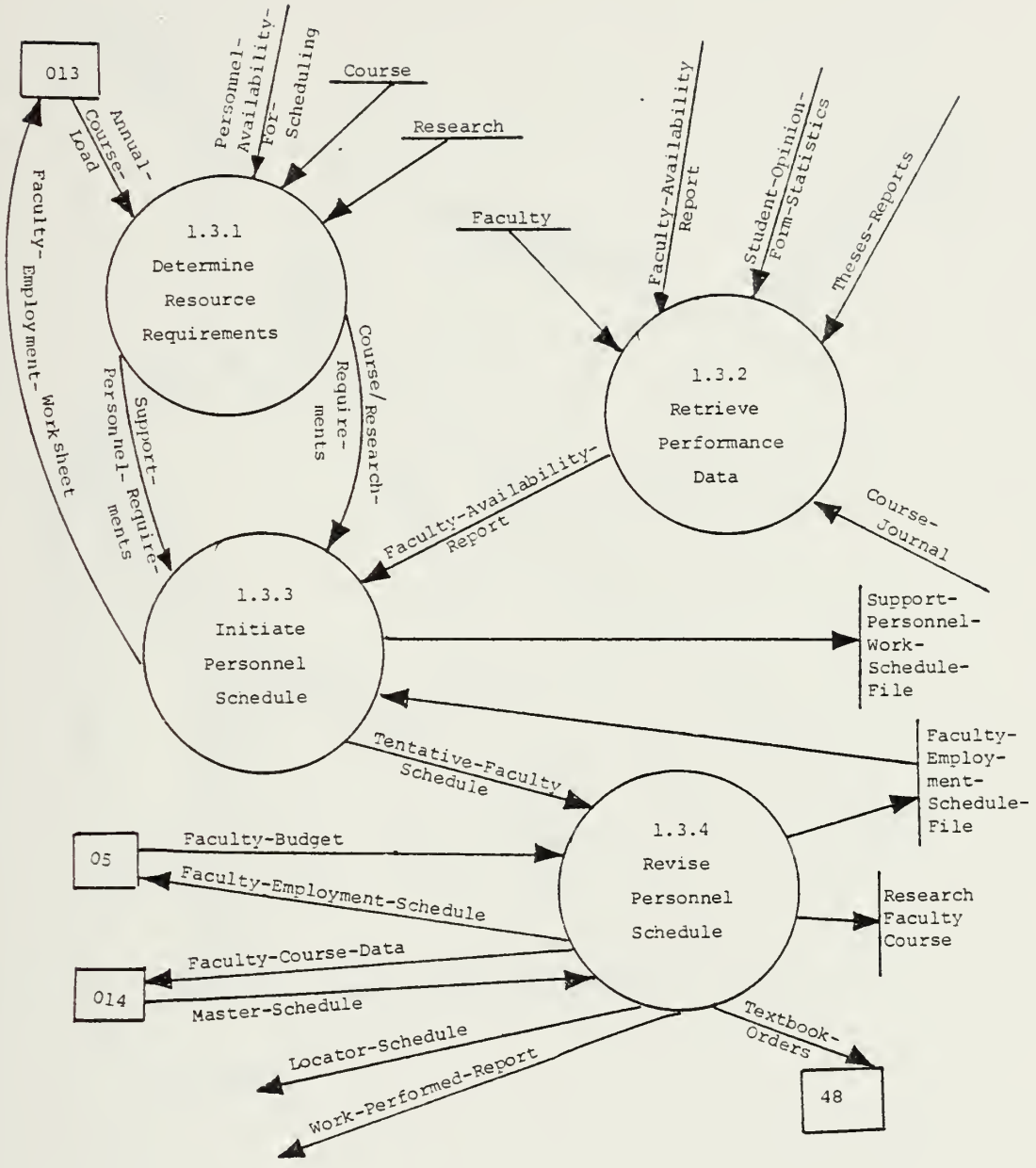

Figure 4-6

Level 3, Process 1.3

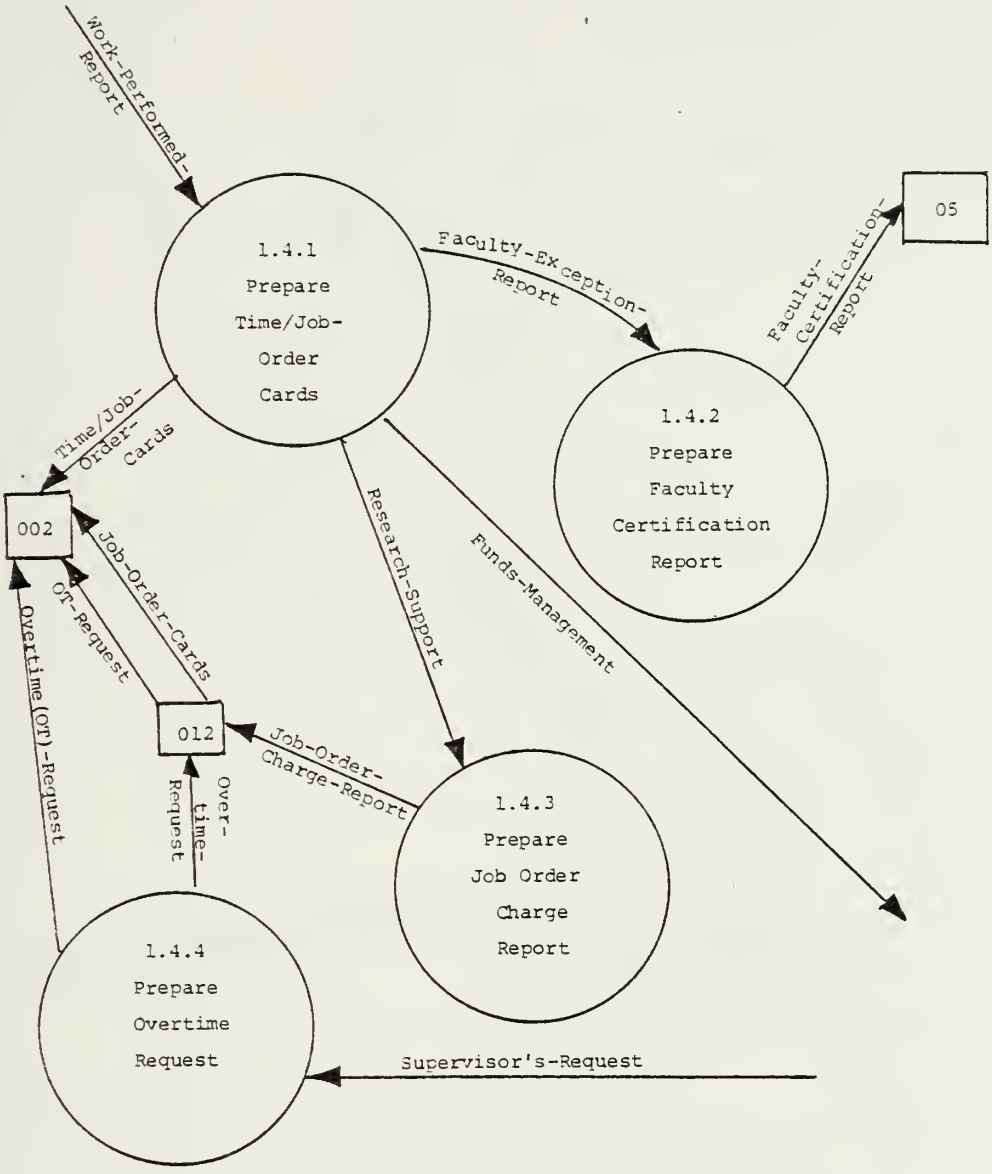

Figure 4-7

Level 3, Process 1.4

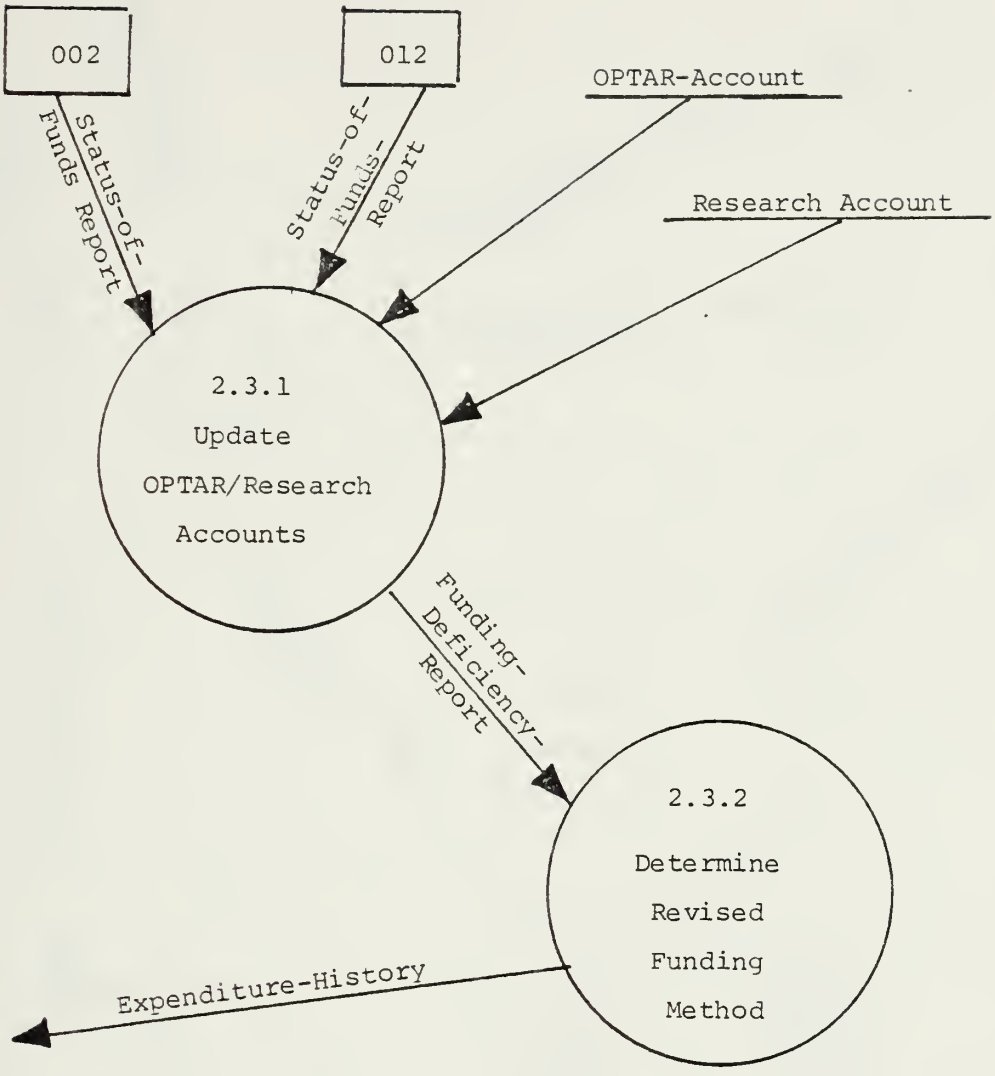

Figure 4-8

Level 3, Process 2.3

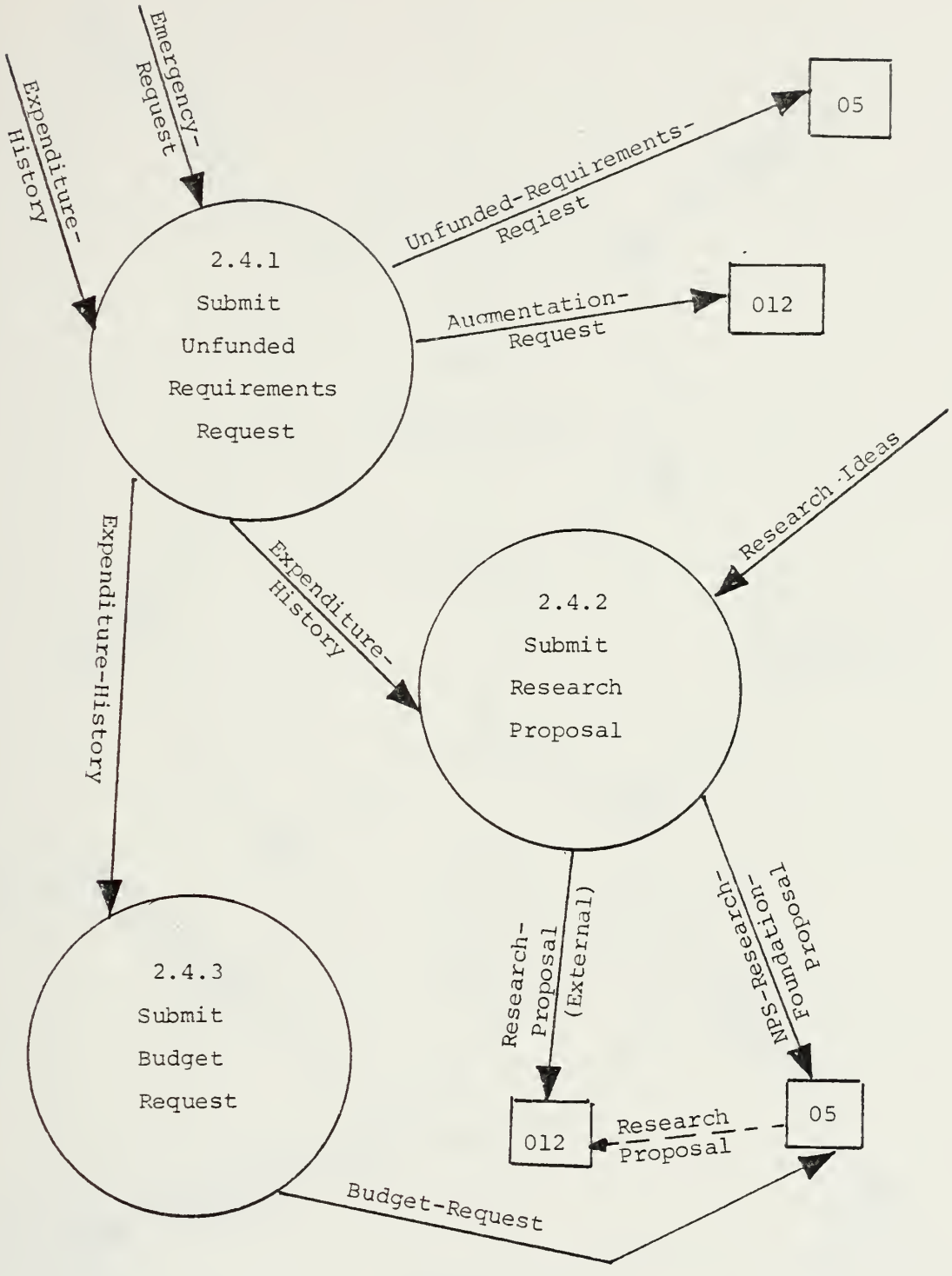

Figure 4-9

Level 3, Process 2.4

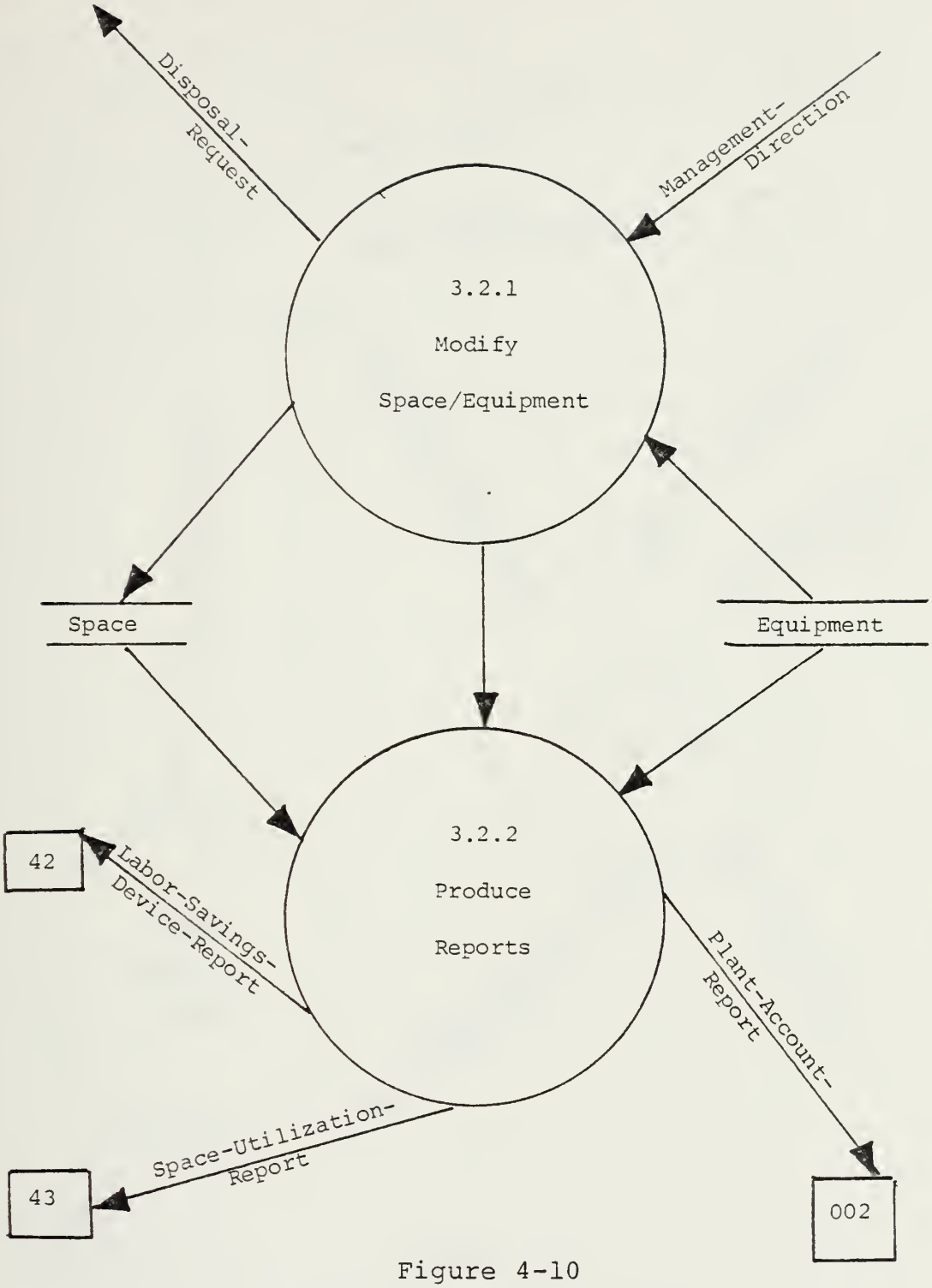

Figure 4-10

Level 3, Process 3.2

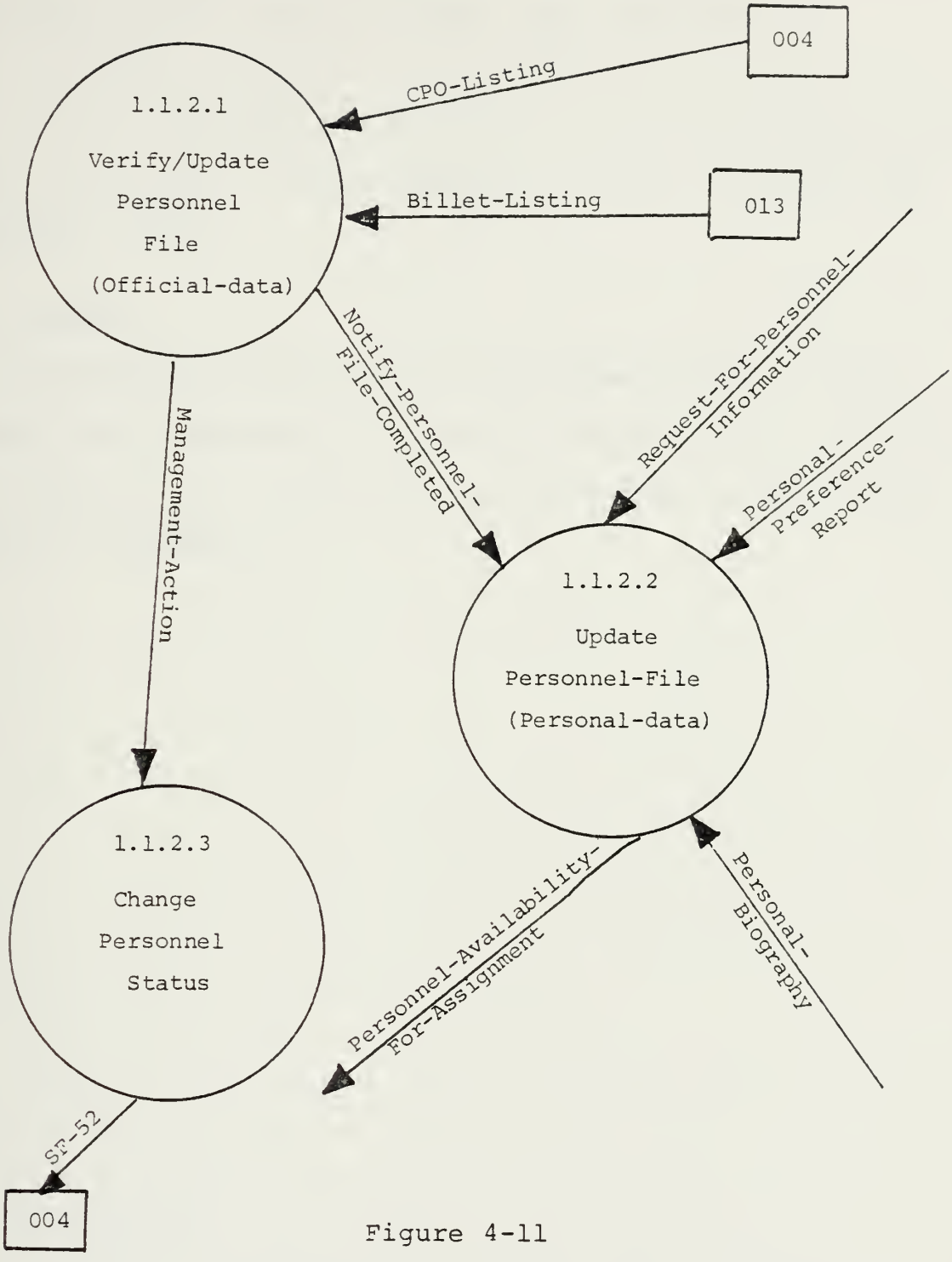

Figure 4-11

Level 4, Process 1.1.2

1. Management may decide that some other personnel-management action needs to occur, i.e., promotion, or re-assignment. Process 1.1.2.3 shows this evolution.

2. Supplementary information concerning the employee may be available, at this juncture, in order to update the personnel record.

D. SUMMARY

The data flow diagrams were discussed briefly in this chapter and displayed in Figures 4-1 through 4-11. They are self-explanatory. but will also be included in the data dictionary, Appendix A.

V. DATA DICTIONARY

The Data Dictionary, Appendix A, is a compendium of this study that can stand alone as a working document after the system designer has digested the essence of this narrative. It is also intended to be used as a desk guide for the user after implementation. As such, it should not be considered static, but be updated regularly as new requirements, or enhancements, come to light. DeMarco's Data Dictionary consists of:

1. data flow definitions,
2. data element definitions,
3. file/database descriptions[25], and
4. process descriptions.

For continuity purposes, the author has included the Data Flow Diagrams and the Data Structure Diagram in the dictionary. These two should be updated during implementation since the entire package can be used as an excellent training manual even before a user touches a keyboard.

Before the examples of the content of the Data Dictionary are explored, some definitions and conventions[26] need to be reviewed:

Definitions:

DATA FLOW is a pipeline through which packets of information flow.

FILE is a time-delayed repository of data.

PROCESS is a transformation of incoming data flows(s) into outgoing flow(s).

DATA ELEMENT is a subset of a data flow. It may be subdivided into sub-elements, which are also defined as elements in their own right.

Relational Operators

Functional Operators

Sequence—the concatenation of two or more components in order.

Selection—the choice of one of two or more possibilities.

Iteration—the repetition of a designated component from zero to infinity (limits may be shown as sub/superscripts).

Optional—zero or one iteration of a component.

Constructs

Function	Structured English	Notation
Sequence	1. is equivalent to	=
	2. and	+
Selection	either-or	[ ]
Iteration	iterations of	{ }
Optional	optional	( )
Comments	amplification	*comment*

A. DATA FLOW DEFINITIONS

There should be one Data Flow Definition for each arrow on each Data Flow Diagram. Some arrows in this study were conceptual flows, but are included for continuity purposes. Implementation may actually produce a flow of some sort.

Figure 5-1, FACULTY-CERTIFICATION-REPORT, and Figure 5-2, FACULTY-COURSE-DATA, are examples of Data Flow Definitions. Each data element number[27] is shown also. The notes portion of the recommended form may list the source, destination, and reference of the data flow.

B. DATA ELEMENT DEFINITIONS

There should be one Data Element Definition for each element shown on a Data Flow Definition, but this too may be relaxed. The only data elements required, in the opinion of this author, are the ones that are to be included in file descriptions.

Figure 5-3, BIO-DATA, Figure 5-4, CATEGORY-CODE, and Figure 5-5, PROF-NAME, are all examples of Data Element Definitions. Names that are obvious are listed as Self-Defining (S.D.). The notes portion of the form should indicate the data flows and files of which the elements are a member[28].

C. FILE DESCRIPTIONS

This study recommends only 12 files. It is the author's contention that this arrangement minimizes redundancy of data elements in the files, but allows for extreme flexibility for ad hoc retrievals.

DATA FLOW NAME: FACULTY-CERTIFICATION-REPORT

ALIASES: CIVILIAN-FACULTY-EMPLOYMENT-CERTIFICATE

COMPOSITION:

= 1 { FACULTY + BI-WEEKLY-PERIOD } N

N = number of faculty

NOTES:

PROCESSES: 1, 1.4, 1.4.2

Report only shows changes from the faculty employment schedule, i.e., sick and annual leave, travel, leave without pay.

Figure 5-1

Faculty-Certification-Report

DATA FLOW NAME: FACULTY-COURSE-DATA

ALIASES:

COMPOSITION:

= { COURSE-NUMBER + COURSE-NAME + 1{PROF-NAME}S +
NO-SEGMENTS

S = number of segments

NOTES:

PROCESSES: 1, 1.3, 1.3.4

Report is made by annotating the quarterly course load report and sending it to the scheduler.

Figure 5-2

Faculty-Course-Data

DATA ELEMENT NAME: BIO-DATA

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

+ (MARITAL-STATUS) + (ADDRESS) + (TELEPHONE-NUMBER) +
(BIRTHDATE) + (BIRTHPLACE)

NOTES:

FILE: PERSONNEL

DATA FLOW:

SUBSET OF DATA ELEMENT(S):

PRIMARY KEY or SECONDARY KEY

Figure 5-3

BIO-Data

DATA ELEMENT NAME: CATEGORY-CODE

ALIASES:

VALUES AND MEANINGS:

BK	BOOK PURCHASE
CE	SUPPORT SALARY ON CONTINUING EDUCATION SHORT COURSES
CH	RESEARCH CHAIR SALARY
CR	CLAIM FOR REIMBURSEMENT
EQ	EQUIPMENT (PLANT ACCOUNT>$1000
FA	FACULTY SALARY DURING ACADEMIC YEAR
FC	FACULTY SALARY FOR CONTINUING EDUCATION
FI	FACULTY SALARY DURING INTERSESSIONAL
FO	FACULTY SALARY WHEN OFF CAMPUS
FR	FUNDS RECEIVED(MAIN ACCOUNT FUNDS)
FT	FUNDS TRANSFER TO AGENCY OUTSIDE NPS
HR	HONORARIUM
IC	INDIRECT COSTS
MC	MAINTENANCE CONTRACTS
MP	MINOR PROPERTY (EQUIPMENT<#1000)
MS	MISCELLANEOUS
PR	PRINTING AND REPRODUCTION COSTS
PU	PUBLICATION CHARGES
SC	SUPPORT SERVICES CONTRACTS
SM	SUBSCRIPTIONS TO MAGAZINES
SO	SUPPORT CONTRACTS WITH SUPPLY OFFICE
SS	SUPPORT SALARY
SU	SUPPLIES
TB	TELEPHONE BILLS
TD	TRAVEL DOMESTIC (U.S. AND CANADA)
TO	TRAVEL OVERSEAS
TR	TRANSFER RESPONSIBILITY (SUBSIDIARY ACCOUNT FUNDS)
TY	TYPING SERVICES OUTSIDE NPS

NOTES:

FILE:OPTAR AND RESEARCH

DATA FLOW:

SUBSET OF DATA ELEMENT(S):

PRIMARY KEY or SECONDARY KEY

Figure 5-4

Category-Code

DATA ELEMENT NAME: PROF

ALIASES: PROFESSOR, PROF-NAME

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

MASTER SCHEDULE

PROF = CODE + NAME + DEPARTMENT

CODE	NAME	DEPARTMENT
Bi	CDR BISHOP	AS
Bk	PROF BOGER	AS
Rh	PROF RICHARDS	OR

NOTES:

FILE:COURSE

DATA FLOW: MASTER SCHEDULE

SUBSET OF DATA ELEMENT(S):EMPLOYEE-DATA

PRIMARY KEY or SECONDARY KEY

Figure 5-5

Prof

Figure 5-6, COURSE, Figure 5-7, EQUIPMENT, and Figure 5-8, FACULTY, are examples of File Descriptions. Primary keys are underlined and secondary keys are shown with dashes, i.e._____.

D. PROCESS DESCRIPTIONS

Process Descriptions are only able to be described for functional primitives, the lowest "bubbles" of the Data Flow Diagrams. Structured English, Decision Tables, or Decision Trees may be used. This approach will minimize mis-interpretation when actually implementing.

Figure 5-9, ACQUIRE-PROPERTY, Process 3.1, is an example of a Process Description.

FILE/DATABASE NAME:	COURSE
ALIASES:	CATALOG

COMPOSITION:

COURSE-NUMBER + COURSE-NAME + CREDIT-HOURS +

QUARTER-OFFERED + COURSE-CO-ORDINATOR +

(PROF + AY-QTR) + (REMARKS)

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS

Figure 5-6

Course

FILE/DATABASE NAME: EQUIPMENT

ALIASES:

COMPOSITION:

PLANT-ACCOUNT-NUMBER + NOMENCLATURE + MAKE/MODEL + SERIAL-NUMBER + NSN + U/P + PURCHASE-ORDER-NO + YEAR-ACQUIRED + LOCATION + (REMARKS)

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS

Plant account number field may be used to insert an A/S department numbering system, i.e., D1, C1, for non-accountable furniture, such as desks and chairs. The plant account report calls for quantity of equipment per location, but this would be superfluous in this file since there would be only one record per piece of equipment.

Figure 5-7

Equipment

FILE/DATABASE NAME: FACULTY

ALIASES:

COMPOSITION:

1 { EMPLOYEE-NUMBER + ACADEMIC-DISCIPLINE + RANK + TENURE + FACULTY-INITIAL-RANK + FACULTY-APPOINTMENTS-CURRENT-RANK + FACULTY-YEARS-OF-EXPERIENCE + { COURSE-HISTORY } + { COURSE-REQUESTED } + { THESIS } + { PUBLISHING } + { PROFESSIONAL } + { PREVIOUS-ACADEMIC-ASSIGNMENTS } + { COURSE/LABORATORY-DEVELOPMENT } + { CONTINUING-EDUCATION-ACTIVITY} + { SELF-IMPROVEMENT-EFFORTS } + PLANS-FOR-198X + { RESEARCH-AREA } + { COSTC }

ORGANIZATION: DIRECT ACCESS

NOTES: NF = number of faculty.

PRIMARY KEY

SECONDARY KEYS are also within COURSE-HISTORY, THESIS, PUBLISHING, PROFESSIONAL, AND PREVIOUS-ACADEMIC-ASSIGNMENTS.

Figure 5-8

Faculty

```
PROCESS NAME:  ACQUIRE PROPERTY

PROCESS NUMBER:      3.1

PROCESS DESCRIPTION:

    FOR EACH MATERIAL-RECEIPT-DOCUMENT

        VERIFY THAT PROPERTY was requisitioned by DEPT

        VERIFY that document data EQUALS PROPERTY

        IF DISCREPANCY exists NOTIFY supply department

        OTHERWISE

            IF PROPERTY EQUALS EQUIPMENT

                BUILD EQUIPMENT-FILE record

                ASSIGN LOCATION

                IF EQUIPMENT has PLANT-ACCOUNT-NO

                    NOTIFY comptroller department

                MOVE EQUIPMENT to LOCATION

            IF PROPERTY EQUALS SUPPLIES

                ACCESS SUPPLIES-FILE

                INCREMENT DEMAND(56) by QUANTITY
                received

                MOVE SUPPLIES to the vault

            IF PROPERTY EQUALS DIRECT-TURNOVER(DTO)

                MOVE DTO to PROF

            IN ANY CASE

                ACCESS OPTAR/RESEARCH-ACCOUNT-FILE

                STATUS = "RECEIVED"+DATE

                FILE MATERIAL-RECEIPT-DOCUMENT
```

Figure 5-9

Acquire Property

VI. LOGICAL FILE STRUCTURES

Chapter Five showed the reader an example of a database/file, but how should the analyst consider the set of files that are required to support a system? Obviously, redundant information in a database/file[29] is expensive, and the expected approach would be to minimize redundancy, wherever possible. However, complex information requirements necessitate complex file structures and, therefore, some redundancy may be expected.

The first approach an analyst takes in designing a file structure is to segregate related data elements by logical function, i.e., room-number, square-feet, telephone-number can be part of a building file. The mechanics of a complex file structure, i.e., pointers, links, stacks versus a data base processor can be deferred until the design/implementation phase. Once the individual files are constructed, the analyst needs to describe a multi-dimensional representation of the data base structures in the form of a Data Structure Diagram [Ref. 18].

The global view of a data structure is called a schema. Figure 6-1 is the schema for the Department's Logical Data Structure. If the designer implements a restricted view of the file structure for a specific user, i.e., the Assistant

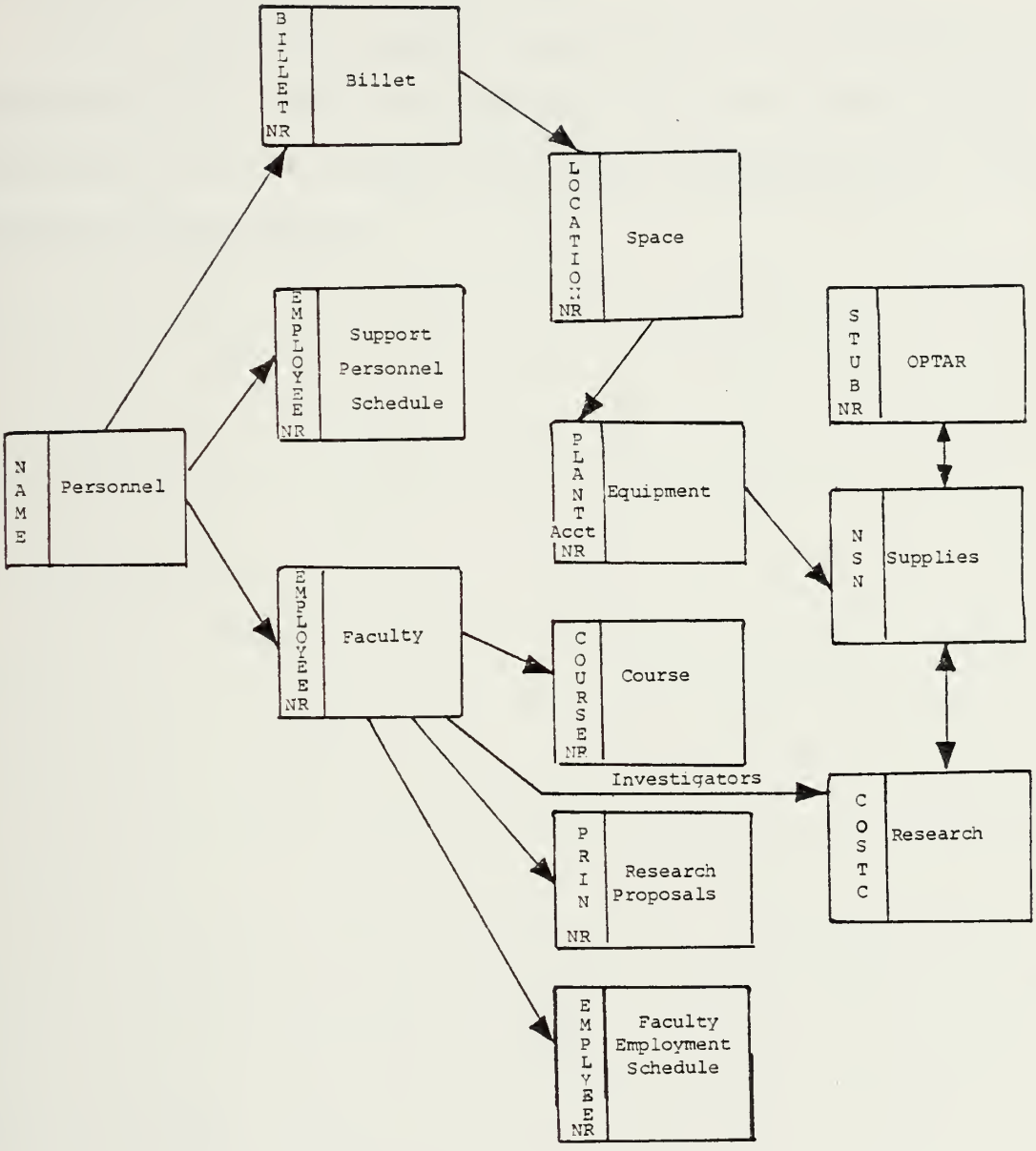

Figure 6-1

Data Structure Diagram

Chairman for Research, the resultant private model of the data structure is called a subschema [Ref. 19]. There is no subschema design at this time.

This chapter has reviewed the global file structure for the Department. The next chapter will make some observations about the study and offer some recommendations for the future implementation.

VII. OBSERVATIONS AND RECOMMENDATIONS

During the course of this study, this author gained tremendous insight to the complexity of the management function of the Department. Its diversity is fascinating, but the opportunity for increased productivity is ever-present. Anything that can minimize the tedious nature of its information management function, the more the department and the educational mission it serves will benefit. This author will make some observations and offer some suggestions.

A. OBSERVATIONS

1. The Department is a "going concern" and is able to fulfill its mission in its present state without automation of the information function.

2. Automation should proceed slowly with this study as a framework.

3. Automation of a function, i.e., the Supplies file, should be considered experimental for a reasonable time period, i.e., six months, for instance, until its benefit can really be determined.

4. An integrated data base should be the goal of the entire school, so that data need be entered and maintained only once. Re-entry at individual work centers, i.e., the Department, is expensive and error-prone.

B. RECOMMENDATIONS

1. The design/implementation task should be suggested to the CSM, September, 1984, graduates, as a proposed thesis topic. The documentation, much like the data dictionary, should be considered sufficient for the thesis.

2. The Department should assign, and incorporate in the position description, as a data base administrator a member of the support staff. It should not be a hands-on user nor a member of the faculty.

3. The methodology, recommended by DeMarco, should be "exported" to the rest of N.P.S. for eventual integration of the information system and to serve as the basis for Task Analyses to determine staffing requirements.

APPENDIX A

DATA DICTIONARY

No.	DATA FLOW NAMES
1	ANNUAL/QUARTERLY-COURSE-LOAD
2	AUGMENTATION-REQUEST
3	BILLET-CHANGE-NOTIFICATION
4	BILLET-LISTING
5	BUDGET-REQUEST
6	COURSE-JOURNAL
7	COURSE/RESEARCH-REQUIREMENTS
8	CPO-LISING(CURRENT)
9	CPO-LISTING(PROPOSED)
10	DISPOSAL-REQUEST
11	EMERGENCY-REQUEST
12	EXPENDITURE-HISTORY
13	EXPENDITURE-REQUEST
14	FACULTY-ACTIVITY-REPORT
15	FACULTY-AVAILABILITY-REPORT
16	FACULTY-BUDGET
17	FACULTY-CERTIFICATION-REPORT
18	FACULTY-COURSE-DATA
19	FACULTY-EMPLOYMENT-SCHEDULE
20	FACULTY-EMPLOYMENT-WORKSHEET
21	FACULTY-EXCEPTION-REPORT
22	FUNDING-DEFICIENCY-REPORT
23	INQUIRY-RESPONSE
24	JOB-ORDER-CARD
25	JOB-ORDER-CHARGES
26	LABOR-SAVINGS-DEVICE-REPORT
27	LOCATOR-SCHEDULE
28	MANAGEMENT-ACTION

No.	DATA FLOW NAMES
29	MANAGEMENT-DIRECTION
30	MASTER-SCHEDULE
31	MATERIAL-RECEIPT
32	MATERIAL-TURN-IN-REQUEST
33	MILITARY-INSTRUCTORS-PERSONNEL-DATA
34	NOTIFICATION-OF-PERSONNEL-ACTION
35	NOTIFICATION-OF-COMPLETION-OF-PERSONNEL-FILE
36	OPTAR-GRANT (O &MN)
37	OVERTIME-REQUEST
38	PERS-AVAILABILITY-FOR-SCHEDULING
39	PERSONAL-BIOGRAPHY
40	PERSONAL-PREFERENCE-REPORT
41	PERSONNEL-AVAILABILITY-FOR-ASSIGNMENT
42	PERSONNEL-NOTIFICATION-OF-ASSIGNMENT
43	PLANT-ACCOUNT-RECEIPT-REPORT
44	PLANT-ACCOUNT-REPORT
45	PROPERTY-ASSIGNMENT
46	READY-SUPPLY-STORE-REQUEST
47	REQUEST-FOR-PERSONNEL-ACTION
48	REQUEST-FOR-PERSONNEL-INFORMATION
49	REQUISITIONS
50	RESEARCH-IDEA
51	RESEARCH-PROPOSAL
52	RESEARCH-SUPPORT
53	RESOURCE-DATA-DISPLAY
54	SOF-DATA
55	SPACE-UTILIZATION-REPORT
56	STATUS-OF-FUNDS-REPORT
57	SUPERVISORS-REQUEST
58	SUPPORT-PERSONNEL-REQUIREMENT
59	TENTATIVE-FACULTY-SCHEDULE
60	TEXTBOOK-ORDER
61	THESIS-REPORTS

No.	DATA FLOW NAMES
62	TIME-CARDS
63	TRAVEL-MATTER-INQUIRES
64	TRAVEL-ORDERS
65	UNFUNDED-REQUIREMENTS
66	WORK-PERFORMED-REPORT
67	WORK-REQUEST

DATA FLOW NAME: ANNUAL/QUARTERLY-COURSE-LOAD

ALIASES: ACADEMIC-DEPARTMENT-CHAIRMAN-REPORT

COMPOSITION:

ANNUAL = {COURSE-NUMBER + CREDIT-HOURS + { NO-STU +
SECTION + FAC-HRS }4 }

QUARTERLY = { COURSE-NUMBER +CREDIT-HOURS + SECTION +
NO-STU + CURRICULUM-DEGREE + 1 {
STUDENT-NAME} N + NO-STU

N = no students

NOTES:

PROCESSES:

1

1.3

DATA FLOW NAME: AUGMENTATION-REQUEST

ALIASES:

COMPOSITION:

Non-formatted request to the dean of research for additional funds for a research account.

NOTES:

PROCESSES:

2

2.4

2.4.1

DATA FLOW NAME: BILLET-CHANGE-NOTIFICATION

ALIASES:

COMPOSITION:

Unstructured report to departmental management of a change to the billet listing.

NOTES:

PROCESSES:

1.
1.2
1.2.3

DATA FLOW NAME: BILLET-LISTING

ALIASES:

COMPOSITION:

= [O MN-CIVILIAN-FACULTY]

[ADJUNCT-CIVILIAN-FACULTY]

[ADJUNCT-REIMBURSABLE-CIVILIAN-FACULTY]

[MILITARY-FACULTY]

CIVILIAN-BILLETS-BY-QUARTER + MAN-YEARS

NOTES:

PROCESSES:

1

1.3

DATA FLOW NAME: BUDGET-REQUEST

ALIASES:

COMPOSITION:

= DEPT + DATE + DESCRIPTION/BUDGET-ELEMENT + FYBX/OPTAR
+ FISCAL-YEAR-198(X+1)

NOTES:

PROCESSES:

2

2.2.4

DATA FLOW NAME: COURSE-JOURNAL

ALIASES:

COMPOSITION:

= PROF + COURSE-NUMBER + COURSE-NAME + AY-QTR +
NO-SEGMENTS + TEXTBOOK-USED + GRADE-DISTRIBUTION +
COURSE-COORDINATOR

NOTES:

PROCESSES:

1

1.3

DATA FLOW NAME: COURSE/RESEARCH-REQUIREMENTS

ALIASES:

COMPOSITION:

= 1{ AY-ATR + {COURSE-NUMBER + NO-STU} }4+

{RESEARCH + PROF}

NOTES:

PROCESSES:

1

1.3

DATA FLOW NAME: CPO-LISTING(CURRENT)

ALIASES: PERSONNEL-LISTING

COMPOSITION:

= { NAME + SSN + EMPLOYEE-NUMBER + ACTIVITY-SERVICE-COMPUTATION-DATE + TYPE-APPOINTMENT + (LIMITED-APPOINTMENTS) + (PROBATION-PERIOD) + BILLET-NO + PD/JD-NO + POSITION-TITLE + PAY-PLAN + OCCUPATION-SERIES-CODE + GRADE-LEVEL + SALARY-STEP + DATE-OF-EQUIVALENT-INCREASE }

NOTES:

PROCESSES:

1

1.1

This is the current format that the Civilian Personnel Office (CPO) upon request. They can provide on a regular basis if requested.

DATA FLOW NAME: CPO-LISTING (PROPOSED)

ALIASES: NEW-PERSONNEL-LISTING

COMPOSITION:

= { NAME + SSN + EMPLOYEE-NUMBER + (ACADEMIC-DISCIPLINE) + TYPE-APPOINTMENT + (TENURE) + GRADE-LEVEL + SALARY-STEP + SALARY + (POSITION-STATUS) + ACTIVITY-SERVICE-COMPUTATION-DATE + POSITION-TITLE + (LIMITED-APPOINT-MENT) + (PROBATION-PERIOD) + (BILLET-NO) + PD/JD-NO + PAY-PLAN + OCCUPATION-SERIES-CODE + (FACULTY-YEARS-OF-EXPERIENCE) + (FACULTY-INITIAL-RANK) + (FACULTY-APPOINTMENTS-CURRENT-RANK) + DATE-OF-EQUIVALENT-INCREASE }

NOTES:

PROCESSES:

1

1.1

This is a proposed format for a new CPO listing. The extra data is used in the Faculty-Performance-Report for the Chairman. CPO should be asked to provide the report quarterly.

DATA FLOW NAME: DISPOSAL-REQUEST

ALIASES:

COMPOSITION:

Conceptual data flow from faculty/staff requesting removal of furniture/equipment from a specific location.

NOTES:

PROCESSES:

3

3.3

Eventually this request would cause the property to be re-located either to another department space or a turn-in to the supply officer.

DATA FLOW NAME: EMERGENCY-REQUEST

ALIASES:

COMPOSITION:

Unstructured request to departmental management by the funds administrator for additional funds.

NOTES

PROCESSES:

2

2.4

DATA FLOW NAME: EXPENDITURE-HISTORY

ALIASES: OPTAR-BUDGET-EXPENDITURE-DATA

COMPOSITION:

= ITEMS + AY 8X-8Y + AY 8Y-8Z

NOTES:

PROCESSES:

2

2.4

AY 8X-8Y = OPTAR + OTHER + TOTAL ,
i.e., AY 80-81

AY 8Y-8Z = BUDGET + EXPENDITURE+DIFFERENCE,
i.e., AY 81-82

DATA FLOW NAME: EXPENDITURE-REQUEST

ALIASES:

COMPOSITION:

Conceptual data flow emanating from various sources within the department. Usually the request will be from faculty and can be handled with departmental funds (0 MN or Dept 10%), but it could be from a research account's principle investigator, and, as such, s/he has authority to cite the research account on the obligation.

NOTES:

PROCESSES:

2

2.2

DATA FLOW NAME: FACULTY-ACTIVITY-REPORT

ALIASES:

COMPOSITION:

= PROF + RANK + INSTRUCTIONAL-ACTIVITIES +
PUBLISHING + RESEARCH +
OTHER-PROFESSIONAL-ACTIVITIES-EXTERNAL-TO-NPS +
SERVICE-TO-NPS + PLANS-FOR-198X

NOTES:

PROCESSES:

1

1.3

1.3.2

DATA FLOW NAME: FACULTY-AVAILABILITY-REPORT

ALIASES:

COMPOSITION:

= {PROF + ACADEMIC-DISCIPLING + TYPE-APPOINTMENT + TENURE + GRADE-LEVEL + SALARY-STEP + SALARY + (POSITION-STATUS) + ACTIVITY-SERVICE-COMPUTATION-DATE + POSITION-TITLE + (LIMITED-APPOINTMENT) + (PROBATION-PERIOD) + (FACULTY-YEARS-OF-EXPERIENCE) + (FACULTY-INITIAL-RANK) + (FACULTY-APPOINTMENTS-CURRENT-RANK) + { NPS-PROMOTION-HISTORY } + { ACADEMIC-HISTORY } + { MILPERS-INFO} }

NOTES:

PROCESSES:

1

1.3

1.3.2

Promotion history is not part of current or proposed CPO reports. Personnel file in the Department would retain all past grade/grade level information as a person is promoted.

DATA FLOW NAME: FACULTY-BUDGET

ALIASES:

COMPOSITION:

= CODE + OMN-TEACHING + MIL-TEACHING + ADMIN + AA +
THESIS + ED/CE + TRANSFERS + SABB + TOTAL-OMN +
OMN-CIV-FACULTY + RSCH-REIMB

TRANSFERS = [FROM]
[TO]

OMN-FACULTY = PERM + ADJ

NOTES:

PROCESSES:

1

1.3

1.3.4

Enclosure to the faculty budget will also be the billet listing.

DATA FLOW NAME: FACULTY-CERTIFICATION-REPORT

ALIASES: CIVILIAN-FACULTY-EMPLOYMENT-CERTIFICATE

COMPOSITION:

= 1 { FACULTY + BI-WEEKLY-PERIOD } N

N = number of faculty

NOTES:

PROCESSES:

1

1.4

1.4.2

Report only shows changes from the faculty employment schedule, i.e., sick and annual leave, travel, leave without pay.

DATA FLOW NAME: FACULTY-COURSE-DATA

ALIASES:

COMPOSITION:

= { COURSE-NUMBER + COURSE-NAME + 1{PROF-NAME}S +
NO-SEGMENTS }

S = number of segments

NOTES:

PROCESSES:

1

1.3

1.3.4

Report is made by annotating the quarterly course load report and sending it to the scheduler.

DATA FLOW NAME: FACULTY-EMPLOYMENT-SCHEDULE

ALIASES:

COMPOSITION:

= { PROF + { SUMMARY + EMPLOYMENT-SCHEDULE } }

NOTES:

PROCESSES:

1

1.3

1.3.4

The same funding source may be applied to several periods, i.e.,

1-30 Oct	ABCDE
31 OCT-15 NOV	FGHIJ
16 NOV-31 DEC	ABCDE

DATA FLOW NAME: FACULTY-EMPLOYMENT-WORKSHEET

ALIASES: EMPLOYMENT-SCHEDULE-WORKSHEET

COMPOSITION:

= CODE + MQ + {FACULTY + QUARTERLY-ASSIGNMENT }

NOTES:

PROCESSES:

1

1.3

1.3.2

DATA FLOW NAME: FACULTY-EXCEPTION-REPORT

ALIASES:

COMPOSITION:

Unstructured report to management concerning deviation from faculty employment schedule, i.e.,

2 days annual leave 10-11 Oct.

NOTES:

PROCESSES:

1

1.4

1.4.1

Will be used to prepare faculty certification report.

DATA FLOW NAME: FUNDING-DEFICIENCY-REPORT

ALIASES:

COMPOSITION:

= { ACCOUNT-BALANCES } + { PRINCIPLE-INVESTIGATOR +

{ RESEARCH + ACCOUNT=BALANCES} }

NOTES:

PROCESSES:

2

2.3

2.3.1

DATA FLOW NAME: INQUIRY-RESPONSE

ALIASES:

COMPOSITION:

Unstructured reply from the personnel support detachment concerning previous travel matter inquiries.

NOTES:

PROCESSES:

2

2.2

DATA FLOW NAME: JOB-ORDER-CARD

ALIASES: LABOR-JOB-TIME-CARD (NAVDOCKS-1950)

COMPOSITION:

= DATE + NAME + EMPLOYEE-NUMBER + {JOB-ORDER-NUMBER +
ACTUAL-HOURS} + AUTHORIZED-SIGNATURE

NOTES:

PROCESSES:

2

2.2

NPS notice 4235 (series) publishes job order data.

DATA FLOW NAME: JOB-ORDER-CHARGES

ALIASES: FUNDING-FOR-REIMBURSABLE-EMPLOYEES-REPORT

COMPOSITION:

= 1{ 1{ NAME + DATES + DAYS + COSTC + SEGMENT + HPW}F}N

N = number of employees

F = separate funding sequences

NOTES:

PROCESSES:

2

2.2

Dean of research initiates the listing. The department completes the funding data.

DATA FLOW NAME: LABOR-SAVINGS-DEVICE-REPORT

ALIASES: LSDR-REPORT

COMPOSITION:

= DEPT + { NOMENCLATURE + MAKE/MODEL + SERIAL-NO +
LOCATION + SUPPLY-DEPT-INFO + (PLANT-ACCOUNT-NO) +
YEAR-ACQUIRED }

NOTES:

PROCESSES:

3

3.2

Annual report to supply department for all labor saving devices, i.e., calculators, typewriters, safes, micro-fiche readers, word processing equipment, dictaphones, and computer terminals.

DATA FLOW NAME: LOCATOR-SCHEDULE

ALIASES:

COMPOSITION:

= { PROF + { COURSE-NUMBER + { PERIOD + ROOM } } }

NOTES:

PROCESSES:

1

1.3

1.3.4

DATA FLOW NAME: MANAGEMENT-ACTION

ALIASES:

COMPOSITION:

Unstructured information flow from management level directing personnel action, i.e.,

revision of position description

increase in salary step

NOTES:

PROCESSES:

1

1.1

1.1.2

1.1.2.1

DATA FLOW NAME: MANAGEMENT-DIRECTION

ALIASES:

COMPOSITION:

Unstructured direction from departmental management to modify space or equipment

---

NOTES:

PROCESSES:

3

3.2

3.2.1

DATA FLOW NAME: MASTER-SCHEDULE

ALIASES: MASTER-INSTRUCTION-SCHEDULE, 12ND NPS 5330/5

COMPOSITION:

= AY-QTR + EFFECTIVE-DATES + FINAL-EXAM-PERIOD +

{ COURSE-NUMBER + CREDIT-HOURS + NO-STU + WEEKDAY}

NOTES:

PROCESSES:

1

1.3

1.3.4

DATA FLOW NAME: MATERIAL-TURN-IN-REQUEST

ALIASES:

COMPOSITION:

Memorandum to supply officer to indicate transfer of property for eventual re-utilization within NPS or transfer to the ft. ord property disposal office. It consists of a minimum of:

NOMENCLATURE + LOCATION + COST +

(PLANT-ACCOUNT-NUMBER)

NOTES:

PROCESSES:

3

3.3

DATA FLOW NAME: NOTIFICATION-OF-PERSONNEL-ACTION

ALIASES: SF-50

COMPOSITION:

= NAME + SSN + DATE-OF-BIRTH + (VETERANS-PREFERENCE) + SERVICE-COMPUTATION-DATE + (TENURE) + (RETIREMENT) + (FEGLI) + (FLSA) + SEX + CITIZENSHIP + EFFECTIVE-DATE + (ANNUITANT-INDICATOR) + WORK-SCHEDULE + { NOAC + NATURE-OF-ACTION + AUTH-CODE + AUTHORITY} + [FROM/TO] + (NAME-AND-LOCATION-OF-EMPLOYING-OFFICE + PAY/PLAN + OCCUPATIONAL-CODE + GRADE + SALARY-STEP + PAY-BASIS + DUTY-STATION + POSITION-OCCUPIES + (APPROPRIATION-CODE) + REMARKS

FROM/TO = POSITION-TITLE + NUMBER

NOTES:

PROCESSES:

1

1.1

1.1.1

The normal times that the SF50 is received is for new employees, promotions, or lateral transfers within the same pay grade.

DATA FLOW NAME: NOTIFICATION-OF-COMPLETION-OF-PERSONNEL-FILE

ALIASES:

COMPOSITION:

Unstructured verbal report to departmental management that initial personnel file entries have been made.

NOTES:

PROCESSES:

1
1.1
1.1.2
1.1.2.1

DATA FLOW NAME: OPTAR-GRANT (OMN)

ALIASES: OPERATING-TARGET

COMPOSITION:

= 1ST-QTR + 2ND-QTR + 3RD-QTR + 4TH-QTR = TOTAL

NOTES:

PROCESSES:

2

2.1

DATA FLOW NAME: OVERTIME-REQUEST

ALIASES:

COMPOSITION:

= FROM + TO + VIA + TYPE + { EMPLOYEE-NUMBER + NAME +
NO-HOURS + INCLUSIVE-TIMES } + JOB-ORDER-NUMBER +
(WORK- ORDER-NO) + LOCATION + JUSTIFICATION +
AUTHORIZED- SIGNATURE

NOTES:

PROCESSES:

1
1.4
1.4.4

FROM: 54
TO: 002
VIA: 05

Must be approved in advance of the work being performed.

DATA FLOW NAME: PERS-AVAILABILITY-FOR-SCHEDULING

ALIASES:

COMPOSITION:

Conceptual flow - communication occurs simultaneously at time of assignment and throughout employment.

NOTES:

PROCESSES:

1.2

1.2.3

DATA FLOW NAME: PERSONAL-BIOGRAPHY

ALIASES:

COMPOSITION:

= NAME + (ADDRESS) + (TELEPHONE-NUMBER) + (BIRTHDATE) +
(BIRTHPLACE) + ({DEGREE-HISTORY}) + {WORK-HISTORY} +
({COMMERCIAL-INTERESTS}) + (MARITAL-STATUS) +
(REMARKS)

NOTES:

PROCESSES:

1

1.1

1.1.2

Employee may decline to provide some of the information.

DATA FLOW NAME: PERSONNEL-PREFERENCE-REPORT

ALIASES:

COMPOSITION:

= PROF + { COURSE-NAME + COURSE-NUMBER + AY-QTR }

(REMARKS) + { RESEARCH-QTR }

NOTES:

PROCESSES:

1

1.1

1.1.2

Input by faculty to indicate which courses/quarters they would like to teach and which quarter(s) should be scheduled for research.

DATA FLOW NAME: PERSONNEL-AVAILABLE-FOR-ASSIGNMENT

ALIASES:

COMPOSITION:

Conceptual data flow - occurs simultaneously with personnel actions.

NOTES:

PROCESSES:

1

1.2

1.2.3

DATA FLOW NAME: PERSONNEL-NOTIFICATION-OF-ASSIGNMENT

ALIASES:

COMPOSITION:

= NAME + SPACE-DATA

NOTES:

PROCESSES:

1

1.2

1.2.3

DATA FLOW NAME: PLANT-ACCOUNT-RECEIPT-REPORT

ALIASES: PLANT-ACCOUNT-REPORT

COMPOSITION:

Same format as the triennial plant account report, but this report is completed upon each new receipt of an item in the plant account category, usually informally to 002.

NOTES:

PROCESSES:

3

3.1

NPS INST 11016.1A

DATA FLOW NAME: PLANT-ACCOUNT-REPORT

ALIASES:

COMPOSITION:

= DEPT +{NOMENCLATURE + PLANT-ACCOUNT-NUMBER + SERIAL-NUMBER + LOCATION + QUANTITY}

NOTES:

PROCESSES:

3

3.2

Plant account equipment = non-consummable equipment with an expected life > = 2 years + acquisition cost > =$1000.

NPS INST 11016.1A

DATA FLOW NAME: PROPERTY-ASSIGNMENT

ALIASES:

COMPOSITION:

Conceptual data flow to indicate the assignment of equipment to a particular location under departmental control.

NOTES:

PROCESSES:

3

3.1

DATA FLOW NAME: READY-SUPPLY-STORE-REQUEST

ALIASES: OFFICE-SUPPLIES,TURN-IN-OR-REQUEST(12ND NPS 4400/1)

COMPOSITION:

FROM + DATE + ISSUE/TURN-IN + TO + APPROVED-BY + (CREDIT-CARD-NO) + (DATE-REQUIRED) + { NO + STOCK-NO-AND-DESCRIPTION + U/I + QUANTITY + ACTION + U/P + COST } + ISSUED-BY + DATE + RECEIVED-BY + TOTAL

NOTES:

PROCESSES:

2

2.2

DATA FLOW NAME: REQUEST-FOR-PERSONNEL-ACTION

ALIASES: SF-52

COMPOSITION:

= PART-I + PART-II

PART-I = [PERSONNEL-ACTION]
+ REQUESTOR + POINT-OF-CONTACT
[POSITION-ACTION]

PERSONNEL-ACTION = PERSONNEL-ACTION-REQUESTED + PROPOSED-
EFFECTIVE-DATE + (REMARKS)

POSITION-ACTION = POSITION-ACTION-REQUESTED + PROPOSED-
EFFECTIVE-DATE + (REMARKS)

PART-II = [PERSONNEL-DATA]
[POSITION-DATA]

PERSONNEL-DATA = NAME+SSN+(BIRTHDATE)+NATURE-OF-ACTION

POSITION-DATA = FROM/TO = POSITION-TITLE+NUMBER+EMPLOYING-
OFFICE+PAY-PLAN+OCCUPATIONAL-SERIES-CODE+GRADE-LEVEL
+SALARY-STEP+(SALARY)+PAY-BASIS

NOTES:

PROCESSES:

1

1.1

1.1.2

MULTI-USE FORM - TOO MANY VARIETIES OF USE TO ADEQUATELY DOCUMENT ALL THE POSSIBILITIES.

DATA FLOW NAME: REQUEST-FOR-PERSONNEL-INFORMATION

ALIASES:

COMPOSITION:

Conceptual data request for personal input

NOTES:

PROCESSES:

1

1.1

1.1.1

DATA FLOW NAME: REQUISITIONS

ALIASES: DD-FORM-1348

COMPOSITION:

(DOC-IDENT) + (ROUTING-IDENTIFIER) + (MS) + U/I + QUANTITY + DOCUMENT-NUMBER + DEMAND + SUPPLEMENTARY-ADDRESS +(SIGNAL)+(FUND) +(DISTRIBUTION) +(PROJECT) + (PRIORITY) + (ADVICE) + (REMARKS)

NOTES:

PROCESSES:

2

2.2

See supply department customer service manual, chapter 4, for a complete description of all the codes.

DATA FLOW NAME: RESEARCH-IDEA

ALIASES:

COMPOSITION:

Unstructured report to department management detailing an outline for a research proposal.

NOTES:

PROCESSES:

2

2.4

2.4.2

DATA FLOW NAME: RESEARCH-PROPOSAL

ALIASES:

COMPOSITION:

= PRINCIPLE-INVESTIGATOR + TITLE + LABOR + (OFFICE-SPACE)+ (LABORATORY-SPACE) + (COMPUTER-RESOURCES) + (LIBRARY-RESOURCES-REQR) + (OTHER-NPS-RESOURCES-REQR) + {SECONDARY-INVESTIGATORS} + SPONSOR

NOTES:

PROCESSES:

2

2.4

2.4.2

DATA FLOW NAME: RESEARCH-SUPPORT

ALIASES:

COMPOSITION:

Unstructured report to indicate to which research account specific support personnel will be charged.

NOTES:

PROCESSES:

1

1.4

1.4.3

DATA FLOW NAME: RESOURCE-DATA-DISPLAY

ALIASES:

COMPOSITION:

= EMPLOYEE-DATA + AVAILABLE-SPACE-DATA

NOTES:

PROCESSES:

1

1.2

1.2.1

DATA FLOW NAME: SOF-DATA

ALIASES: STUDENT-OPINION-FORM-STATISTICS

COMPOSITION:

= {PROF + FACULTY-YEARS-OF-EXPERIENCE + TEACHING-LOAD
+ COURSE-NUMBER + AY-QTR + NO-STU + {CURRICULUM} +
Q1{MEAN}Q11 + MEAN(Q1-Q11) + MEAN(Q12) + MEAN(Q13)}

NOTES:

PROCESSES:

1
1.3
1.3.2

DATA FLOW NAME: SPACE-UTILIZATION-REPORT

ALIASES:

COMPOSITION:

= { LOCATION + USE + RES + AREA + CAP + NCC + A/N +
AVAIL + ABCDEFG + KLMNOP + REMARKS + JUL }

NOTES:

PROCESSES:

3

3.2

Submission of report is the responsibility of the building co-ordinator (code 36), but the department has the responsibility of verifying the data.

DATA FLOW NAME: STATUS-OF-FUNDS-REPORT

ALIASES: BI-WEEKLY-PRINTOUT

COMPOSITION:

= { ACCOUNT + AS-OF-DATE + 1{ DATE + CATEGORY-CODE + ITEM-DESCRIPTION + (UPDATE-INFO) + STUB-NUMBER + (LABOR-OBLIGATION) + (OTHER-OBLIGATION) + (SUBSIDIARY-OBLIGATION) + (SUBSIDIARY-BALANCE) + (ACCOUNT-BALANCES)}+ SUMMARY-OF-CATEGORY-CHARGES + (ACCOUNT-BALANCES)}

NOTES:

PROCESSES:

2

2.1

2.3

2.3.1

Report received by-weekly from research office on all research accounts (including department's 10% funds). Monthly report received from comptroller for OMN funds. All transactions are listed (plus updates) from beginning of fiscal year or account inception, whichever earlier.

DATA FLOW NAME: SUPERVISOR'S-REQUEST

ALIASES:

COMPOSITION:

Unstructured request from supervisor for permission for a subordinate to work overtime, i.e., more than 8 hours in one day or more than 40 hours in one week.

NOTES:

PROCESSES:

1

1.4

1.4.4

DATA FLOW NAME: SUPPORT-PERSONNEL-REQUIREMENTS

ALIASES:

COMPOSITION:

Unstructured verbal report indicating a need for a support person to be assigned to a task or function.

NOTES:

PROCESSES:

1

1.3

1.3.1

DATA FLOW NAME: TENTATIVE-FACULTY-SCHEDULE

ALIASES:

COMPOSITION:

$$= 1\{AY\text{-}QTR + \{PROF + \left[\begin{matrix} COSTC \\ COURSE\text{-}NAME + COURSE\text{-}NUMBER \end{matrix}\right]\}\}$$

NOTES:

PROCESSES:

1

1.3

1.3.3

Department scheduler indicates for each quarter if a professor will be teaching or on research (costc).

DATA FLOW NAME: TEXTBOOK-ORDER

ALIASES:

COMPOSITION:

= DEPT + AY-QTR + {COURSE-NUMBER + NO-SEGMENTS + PROF
+ {TEXTBOOK-TITLE + PUBLISHER + QUANTITY +
REQUIRED/RECOM- MENDED}}

NOTES:

PROCESSES:
1
1.3
1.3.4

DATA FLOW NAME: THESIS-REPORT

ALIASES:

COMPOSITION:

= STUDENT-NAME + CURRICULUM + TITLE + AY-QTR + ADVISOR

NOTES:

PROCESSES:

1

1.3

1.3.2

Academic quarter indicated is the graduation quarter for the student.

FLOW NAME: TIME-CARDS

SES: BI-WEEKLY-TIME-CARD(NAVCOMPT-FORM-911A)

OSITION:

EMPLOYEE-NUMBER + NAME + PERIOD-ENDING + (NUMBERS) +

[REGULAR-HOURS]

1{[OVERTIME-HOURS] }14 + AUTHORIZED-SIGNATURE

[LEAVE-HOURS]

S:

PROCESSES:

1

1.4

1.4.1

DATA FLOW NAME: TRAVEL-ORDERS

ALIASES: TEMADD-TRAVEL-ORDER(NAVPERS 1320/16)

COMPOSITION:

= FROM + TO + DOCUMENT-NUMBER + TANGO-NR + SSN + DATE +
REF + TYPE-TRAVEL + PROCEED-DATE + NO-DAYS +
ESTIMATED-DATE-OF-RETURN + { ITINERARY } + TYPE-OF-
TEMP-DUTY + REASON-FOR-TRAVEL + { ACCOUNTING-DATA } +
ESTIMATED-COST + CUSTOMER-IDENTIFICATION-CODE

NOTES:

PROCESSES:

2

2.2

DATA FLOW NAME: UNFUNDED-REQUIREMENTS

ALIASES:

COMPOSITION:

Unstructured report to the dean of information and policy sciences, usually in the form of a memorandum listing the nature, cost, and justification for the requirement.

NOTES:

PROCESSES:

2

2.4

DATA FLOW NAME: WORK-PERFORMED-REPORT

ALIASES:

COMPOSITION:

Verbal report from supervisor that a subordinate had performed scheduled work.

NOTES:

PROCESSES:

1

1.3

Used to initiate preparation of time cards or faculty certification report.

DATA FLOW NAME: WORK-REQUEST

ALIASES:

COMPOSITION:

FROM + TO + REQUEST-FOR + DESCRIPTION

NOTES:

PROCESSES:

3

3.2

Request is submitted to the public works officer via the planning officer to alter, in some way, the building layout.

DATA ELEMENT NAMES

No.	DATA ELEMENT NAMES
1	A/N
2	AACSB/NASBA-MEMBERSHIP-FEES
3	ABCDEFG
4	ACADEMIC-DISCIPLINE
5	ACADEMIC-HISTORY
6	ACADEMIC-YEAR
7	ACCOUNT
8	ACCOUNT-BALANCES
9	ACCOUNTING-DATA
10	ACTIVITY-NATURE
11	ACTIVITY-SERVICE-COMPUTATION-DATE
12	ACTUAL-HOURS
13	ADDRESS
14	ADJUNCT-CIVILIAN-FACULTY
15	ADJUNCT-REIMBURSABLE-CIVILIAN-FACULTY
16	ADMIN-SUPPORT
17	ADVISOR
18	AREA
19	AS-OF-DATE
20	AUTHORIZED-SIGNATURE
21	AVAIL
22	AVAILABLE-SPACE-DATA
23	AY-QTR
24	BI-WEEKLY-PERIOD
25	BILLET-NO
26	BIO-DATA
27	BIOGRAPHIC
28	BIRTHDATE
29	BIRTHPLACE
30	CAP
31	CATEGORY-CODE
32	CITY

No.	DATA ELEMENT NAMES
33	CIVILIAN-BILLETS-BY-QUARTER
34	CODE
35	COMMERCIAL-INTERESTS
36	COMMUNICATIONS
37	COMPUTER-RESOURCES
38	CONTINUING-EDUCATION-ACTIVITY
39	COST
40	COSTC
41	COURSE-COORDINATOR
42	COURSE-HISTORY
43	COURSE-NAME
44	COURSE-NUMBER
45	COURSE-PREFERENCE
46	COURSE/LABORATORY-DEVELOPMENT
47	COURSES-OFFERED
48	COURSES-REQUESTED
49	CPO-DATA
50	CREDIT-HOURS
51	CURRICULUM
52	CURRICULUM-CODE
53	CURRICULUM-DEGREE
54	DATE
55	DATE-OF-EQUIVALENT-INCREASE
56	DATE-OF-LAST-UP-DATE
57	DATE-OF-RANK
58	DATES
59	DAYS
60	DEGREE
61	DEGREE-HISTORY
62	DEMAND
63	DEPT
64	DESCRIPTION
65	DESCRIPTION/BUDGET-ELEMENT

No.	DATA ELEMENT NAMES
66	DOCUMENT-NUMBER
67	EFFECTIVE-DATES
68	EMPLOYEE-DATA
69	EMPLOYEE-NUMBER
70	EMPLOYMENT-SCHEDULE
71	EOQ
72	EQUIPMENT($200>$<$3000)
73	EQUIPMENT-DATA
74	EQUIPMENT-MAINTENANCE
75	ESTIMATED-COST
76	EXAM-WEEK
77	EXPIRES
78	FAC-HRS
79	FACULTY
80	FACULTY-APPOINTMENTS-CURRENT-RANK
81	FACULTY-INITIAL-RANK
82	FACULTY-TAD
83	FACULTY-YEARS-OF-EXPERIENCE
84	FINAL-EXAM
85	FINAL-EXAM-PERIOD
86	FIRM
87	FREQUENCY-ASSIGNED
88	FUNDING-SOURCE
89	FURNITURE/SIGNS
90	GRADE-DISTRIBUTION
91	GRADE-LEVEL
92	HPW
93	INCLUSIVE-DATES
94	INCLUSIVE-TIMES
95	INSTITUTION
96	INSTRUCTIONAL-ACTIVITIES
97	ISSUE/TURN-IN
98	ITEM
99	ITEM-DESCRIPTION

No.	DATA ELEMENT NAMES
100	ITEMS
101	JOB-ORDER-NUMBER
102	JUL
103	JUSTIFICATION
104	KLMNOP
105	LABOR
106	LABOR-OBLIGATION
107	LABORATORY-SPACE
108	LEAVE-HOURS
109	LIBRARY-RESOURCE-REQR
110	LIMITED-APPOINTMENTS
111	LINEAL-NUMBER
112	LOCATION
113	MAJOR
114	MAKE & MODEL
115	MAN-YEARS
116	MARITAL-STATUS
117	MEAN
118	MEAN (Q1-Q11)
119	MEAN (Q12)
120	MEAN (Q13)
121	MILITARY-FACULTY
122	MILPERS-INFO
123	MQ
124	NAME
125	NCC
126	NO-DAYS
127	NO-HOURS
128	NO-SEGMENTS
129	NO-STU
130	NOMENCLATURE
131	NPS-PROMOTION-HISTORY
132	NSN

No.	DATA ELEMENT NAMES
133	O&MN-CIVILIAN-FACULTY
134	OBLIGATION
135	OCCUPATION-SERIES-CODE
136	OFFICE-SPACE
137	OTHER-NPS-RESOURCE-REQR
138	OTHER-OBLIGATION
139	OTHER-PROFESSIONAL-ACTIVITIES-EXTERNAL-TO-NPS
140	OTHER-PURCHASED-SERVICES
141	OVERTIME-HOURS
142	P.O.BOX
143	PAY-BASIS
144	PAY-PLAN
145	PD/JD-NO
146	PERIOD
147	PERIOD-ENDING
148	PLANS-FOR-198X
149	PLANT-ACCOUNT-NUMBER
150	POSITION-STATUS
151	POSITION-TITLE
152	PREVIOUS-ACADEMIC-ASSIGNMENTS
153	PREVIOUS-ASSIGNMENT
154	PREVIOUS-DEMAND
155	PRINCIPLE-INVESTIGATOR
156	PROBATION-PERIOD
157	PROF
158	PROFESSIONAL
159	PROPOSED-DATE
160	PROPOSED-EFFECTIVE-DATE
161	PUBLISH-DATE
162	PUBLISHER
163	PUBLISHING
164	PURCHASE-ORDER-NO
165	PURCHASED-PRINTING

No.	DATA ELEMENT NAMES
166	QTR
167	QUANTITY
168	QUARTER-OFFERED
169	QUARTERLY-ASSIGNMENT
170	RANK
171	REGULAR-HOURS
172	REMARKS
173	REQUEST-FOR
174	REQUIRED/RECOMMENDED
175	RES
176	RESEARCH
177	RESEARCH-ACCOUNT
178	RESEARCH-AREA
179	RESEARCH-QTR
180	ROOM
181	ROTATION-DATE
182	SALARY
183	SALARY-STEP
184	SECONDARY-INVESTIGATORS
185	SECTION
186	SEGMENT
187	SELF-IMPROVEMENT-EFFORTS
188	SERIAL-NUMBER
189	SERVICE-TO-NPS
190	SOF
191	SOURCE-OF-SUPPLY
192	SPACE-DATA
193	SPONSOR
194	SSN
195	STATUS
196	STOCK-NO-AND-DESCRIPTION
197	STREET-NAME
198	STREET-NUMBER
199	STUB-NUMBER
200	STUDENT-NAME

No.	DATA ELEMENT NAMES
201	SUBMISSION-DATE
202	SUBSCRIPTION/BOOKS
203	SUBSIDIARY-BALANCE
204	SUBSIDIARY-OBLIGATION
205	SUM-TOTAL-OF-OBLIGATIONS
206	SUMMARY
207	SUMMARY-OF-CATEGORY-CHARGES
208	SUMMARY-OF-REIMB-MAN-QTRS
209	SUPPLEMENTARY-ADDRESS
210	SUPPLIES ($<$200)
211	SUPPLY-DEPT-INFO
212	TANGO-NR
213	TARGET
214	TEACHING
215	TEACHING-LOAD
216	TELEPHONE-COST
217	TELEPHONE-NUMBER
218	TENURE
219	TEXTBOOK-TITLE
220	TEXTBOOK-USED
221	THESIS
222	TITLE
223	TOTAL
224	TOTAL-FUNDS
225	TOTAL-REMAINING
226	TYPE
227	TYPE-APPOINTMENT
228	U/P
229	UPDATE-INFO
230	USE
231	UTILITIES-RENTAL-OF-EQUIPMENT
232	WEEKDAY
233	WORK-HISTORY

No.	DATA ELEMENT NAMES
234	WORK-ORDER-DATE
235	WORK-ORDER-NO
236	WORK-ORDER-STATUS
237	YEAR-ACQUIRED
238	YEAR-AWARDED
239	ZIP

DATA ELEMENT NAME: A/N

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

A	ADEQUATE
N	NOT ADEQUATE

NOTE:

FILE: SPACE

DATA FLOW: SPACE UTILIZATION REPORT

DATA ELEMENT NAME: AACSB/NASPA-MEMBERSHIP-FEES

ALIASES: ASSOCIATION-FEES

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

NUMERIC IN DOLLAR UNITS

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-ELEMENT; ITEMS

DATA ELEMENT NAME: ABCDEFG

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: COLUMN HEADING DESCRIBING PRIMARY USE OF SPACE,

i.e., OFFICE.

NOTES:

FILE: SPACE

DATA FLOW: SPACE UTILIZATION REPORT

SUBSET OF DATA ELEMENT(S): AVAILABLE SPACE DATA

DATA ELEMENT NAME: ACADEMIC-DISCIPLINE

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE(UPON INTERVIEWING NEW EMPLOYEE- MAY BE CHANGED BY DEPARTMENT

VALUES AND MEANINGS: INDICATES FIELD OF MAJOR STUDY

4 NUMERIC DIGITS, i.e., 0502 - accounting

NOTES:

FILE: FACULTY

DATA FLOW: CPO LISTING; FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): EMPLOYEE DATA

DATA ELEMENT NAME: ACADEMIC-HISTORY

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= TEACHING + THESIS + RESEARCH + PUBLISHING +

PROFESSIONAL + BIOGRAPHIC

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: ACADEMIC-YEAR

ALIASES:

ASSIGNED BY: PROVOST

VALUES AND MEANINGS: SELF DEFINING

EITHER 2 OR 4 NUMERIC DIGITS,i.e., 1984 OR 84

NOTES:

COINCIDES WITH FEDERAL FISCAL YEAR: 1 OCTOBER TO 30 SEPTEMBER.

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: ACCOUNT

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: ARBITRARY NAME ASSIGNED TO FINANCIAL RECORD,i.e., DEPTAS, ELSTER2

NOTES:

FILE: OPTAR, RESEARCH

DATA FLOW: STATUS OF FUNDS REPORT

DATA ELEMENT NAME: ACCOUNT-BALANCES

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= ACCOUNT + COSTC + EXPIRES + TOTAL-REMAINING

NOTES:

FILE: OPTAR, RESEARCH

DATA FLOW: STATUS OF FUNDS REPORT

DATA ELEMENT NAME: ACCOUNTING-DATA

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS:

I.E., 1741804.1180 000 62271 0 000228

2D E EDNOO FP4TOA15221M

NOTES: SEE NPS NOTICE 4235(SERIES)

DATA FLOW: TRAVEL ORDERS, OPTAR(RESEARCH) GRANT

DATA ELEMENT NAME: ACTIVITY-NATURE

ALIASES:

ASSIGNED BY: FACULTY

VALUES AND MEANINGS:

i.e., committee

research grant

NOTES:

SUBSET OF DATA ELEMENT(S): PROFESSIONAL

DATA ELEMENT NAME: ACTIVITY-SERVICE-COMPUTATION-DATE

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: DATE THAT EMPLOYEE STARTED EMPLOYMENT AT NPS.

NUMERIC: YYMMDD i.e., 830508 for May 5, 1983.

NOTES:

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): CPO DATA

DATA ELEMENT NAME: ACTUAL-HOURS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= REGULAR-HOURS + OVERTIME-HOURS

NOTES:

DATA FLOW: JOB ORDER CARD

DATA ELEMENT NAME: ADDRESS

ALIASES:

ASSIGNED BY: EMPLOYEE

VALUES AND MEANINGS:

[STREET-NUMBER + STREET-NAME]

+ CITY + ZIP

[P.O.BOX]

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): BIO-DATA

DATA ELEMENT NAME: ADJUNCT-CIVILIAN-FACULTY

ALIASES:

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING

VALUES AND MEANINGS: LISTING OF AUTHORIZED ADJUNCT
CIVILIAN FACULTY

NOTES:

DATA FLOW: BILLET LISTING

DATA ELEMENT NAME: ADJUNCT-REIMBURSABLE-CIVILIAN-FACULTY

ALIASES:

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING

VALUES AND MEANINGS: LISTING OF AUTHORIZED ADJUNCT FACULTY WHO ARE BEING PAID SOLEY BY EXTERNAL FUNDS

NOTES:

DATA FLOW: BILLET LISTING

DATA ELEMENT NAME: ADMIN-SUPPORT

ALIASES: SECRETARIAL-SUPPORT

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NUMERIC FIGURE (IN $) FOR BUDGET ITEM
LABELED ADMINISTRATIVE SUPPORT

NOTES:

SUBSET OF DATA ELEMENT(S): ITEMS

DATA ELEMENT NAME: ADVISOR

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: ACADEMIC INSTRUCTOR ADVISING NPS STUDENT IN THESIS RESEARCH: TECHNICAL-DIFFERENT FROM THE READER WHO, THOUGH IS PRIMARILY RESPONSIBLE TO ADVISE ON THE STYLE OF WRITING, MUST ALSO ENSURE THAT THE RESEARCH SUBSTANCE IS VALID.

IDENTIFICATION MAY BE EITHER LAST NAME, i.e., LYONS, or ROUTING CODE, i.e., 54js.

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: AREA

ALIASES:

ASSIGNED BY: DEPARTMENT/PUBLIC WORKS

VALUES AND MEANINGS: SQUARE FEET OF USABLE SPACE

NUMERIC -USUALLY LESS THAN 6 DIGITS

NOTES:

FILE: SPACE

DATA FLOW: SPACE UTILIZATION REPORT

SUBSET OF DATA ELEMENT(S): AVAILABLE-SPACE-DATA,

SPACE-DATA

DATA ELEMENT NAME: AS-OF-DATE

ALIASES:

ASSIGNED BY: PREPARER OF SPECIFIC REPORT

VALUES AND MEANINGS: THE DATE OF PREPARATION OF A REPORT, AFTER WHICH NO TRANSACTIONS ARE CONSIDERED.

CAN BE EITHER ALPHA-NUMERIC, i.e., 10 October 1983, or ALL NUMERIC, i.e., 10/10/83.

NOTES:

DATA FLOW: STATUS OF FUNDS REPORT

DATA ELEMENT NAME: AUTHORIZED-SIGNATURE

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: PERSON WHO IS AUTHORIZED TO SIGN A

DOCUMENT: MUST BE SPECIFIED IN ADVANCE.

ALPHA CHARACTERS, i.e., R.S. ELSTER

NOTES:

DATA FLOW: TIME CARDS, READY SUPPLY STORE REQUESTS,

REQUISITIONS.

SUBSET OF DATA ELEMENT(S): CPO-DATA

DATA ELEMENT NAME: AVAIL

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: SHORT, PLAIN LANGUAGE EXPLANATION AS TO WHY A SPACE IS NOT ADEQUATE.

NOTES:

FILE: SPACE

DATA FLOW: SPACE UTILIZATION REPORT

DATA ELEMENT NAME: AVAILABLE-SPACE-DATA

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= { LOCATION + USE + AREA + ABCDEFG + REMARKS }

NOTES:

DATA FLOW: RESOURCE DATA DISPLAY

DATA ELEMENT NAME: AY-QTR

ALIASES:

ASSIGNED BY: PROVOST

VALUES AND MEANINGS:

3 DIGITS IN THE FORM OF: AYQ

AY = LAST TWO DIGITS OF ACADEMIC YEAR

Q = 1,2,3,4

i.e. 841

NOTES:

FILE: COURSE

DATA FLOW: MASTER SCHEDULE

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY,

COURSES OFFERED

DATA ELEMENT NAME: BI-WEEKLY-PERIOD

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS: THE NAMES OF THE WORKING DAYS IN FORT-
NIGHT, i.e.,

= MON + TUE + WED + THUR + FRI + MON + TUE + WED +
THUR + FRI

NOTES:

DATA FLOW: FACULTY CERTIFICATION REPORT

DATA ELEMENT NAME: BILLET-NO

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: ARBITRARY NUMBERING SYSTEM FOR AUTHORIZED CIVILIAN BILLETS. IT IS COMPOSED OF 4 CHARACTERS, 3 NUMERIC FOLLOWED BY AN ALPHA CHARACTER, i.e. 456B.

NOTES:

FILE: BILLET

SUBSET OF DATA ELEMENT(S): EMPLOYEE-DATA

DATA ELEMENT NAME: BIO-DATA

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

+ (MARITAL-STATUS) + (ADDRESS) + (TELEPHONE-NUMBER) +

(BIRTHDATE) + (BIRTHPLACE)

NOTES:

FILE: PERSONNEL

SECONDARY_KEY

DATA ELEMENT NAME: BIOGRAPHIC

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

BIRTHDATE + MARITAL-STATUS + {PREVIOUS-ACADEMIC-ASSIGN-MENTS} + { COMMERCIAL-INTERESTS} + { DEGREE-HISTORY } + (REMARKS)

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): ACADEMIC HISTORY

DATA ELEMENT NAME: BIRTHDATE

ALIASES:

ASSIGNED BY: GOD

VALUES AND MEANINGS:

CONFIGURATION VARIABLE: ALL NUMERIC, SUCH AS, DDMMYY, i.e., 251136, OR ALPHANUMERIC, i.e., 25 NOVEMBER 1936.

NOTES:

SUBSET OF DATA ELEMENT(S): BIO-DATA, BIOGRAPHIC

DATA ELEMENT NAME: BIRTHPLACE

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

CITY, STATE, AND COUNTRY, IF NOT USA.

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): BIO-DATA, BIOGRAPHIC

DATA ELEMENT NAME: CAP

ALIASES:

ASSIGNED BY: PUBLIC WORKS/SAFETY OFFICER

VALUES AND MEANINGS: NORMALLY, THE NUMBER OF STATIONS IN A CLASSROOM OR LABORATORY, BUT MAXIMUM CAPACITY IN A HALL OR AUDITORIUM MAY HAVE TO BE PRESCRIBED.

NOTES:

FILE: SPACE

DATA FLOW: SPACE UTILIZATION REPORT

DATA ELEMENT NAME: CATEGORY-CODE

ALIASES:

VALUES AND MEANINGS:

BK	BOOK PURCHASE
CE	SUPPORT SALARY ON CONTINUING EDUCATION SHORT COURSES
CH	RESEARCH CHAIR SALARY
CR	CLAIM FOR REIMBURSEMENT
EQ	EQUIPMENT(PLANT ACCOUNT>$1000
FA	FACULTY SALARY DURING ACADEMIC YEAR
FC	FACULTY SALARY FOR CONTINUING EDUCATION
FI	FACULTY SALARY DURING INTERSESSIONAL
FO	FACULTY SALARY WHEN OFF CAMPUS
FR	FUNDS RECEIVED(MAIN ACCOUNT FUNDS)
FT	FUNDS TRANSFER TO AGENCY OUTSIDE NPS
HR	HONORARIUM
IC	INDIRECT COSTS
MC	MAINTENANCE CONTRACTS
MP	MINOR PROPERTY (EQUIPMENT<$1000)
MS	MISCELLANEOUS
PR	PRINTING AND REPRODUCTION COSTS
PU	PUBLICATION CHARGES
SC	SUPPORT SERVICES CONTRACTS
SM	SUBSCRIPTIONS TO MAGAZINES
SO	SUPPORT CONTRACTS WITH SUPPLY OFFICE
SS	SUPPORT SALARY
SU	SUPPLIES
TB	TELEPHONE BILLS
TD	TRAVEL DOMESTIC (U.S. AND CANADA)
TO	TRAVEL OVERSEAS
TR	TRANSFER RESPONSIBILITY (SUBSIDIARY ACCOUNT FUNDS)
TY	TYPING SERVICES OUTSIDE NPS

NOTES:

FILE: OPTAR AND RESEARCH

DATA ELEMENT NAME: CITY

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS: S.D.

SYSTEMS DESIGNER SHOULD SET SOME ARBITRARY LENGTH, i.e. 15 CHARACTERS

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): ADDRESS

DATA ELEMENT NAME: CIVILIAN-BILLETS-BY-QUARTER

ALIASES:

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING

VALUES AND MEANINGS: INDICATION OF ASSIGNMENT OF
INSTRUCTORS DURING THE ACADEMIC QUARTERS.

NOTES:

DATA FLOW: BILLET LISTING

DATA ELEMENT NAME: CODE

ALIASES:

ASSIGNED BY: ADMINISTRATIVE OFFICER/DEPARTMENT

VALUES AND MEANINGS: CODE ASSIGNED FOR A MAIL ROUTING

PURPOSE TO FACILITATE DELIVERY, i.e.,

54	ADMINISTRATIVE SCIENCES DEPARTMENT CHAIRMAN
00	SUPERINTENDENT, NAVAL POSTGRADUATE SCHOOL

NOTES:

DATA FLOW: FACULTY EMPLOYMENT WORKSHEET AND MANY MORE.

DATA ELEMENT NAME: COMMERCIAL-INTERESTS

ALIASES:

ASSIGNED BY: EMPLOYEE

VALUES AND MEANINGS: EXTERNAL ACTIVITY OF EMPLOYEE THAT IS MADE KNOWN TO THE DEPARTMENT FOR POSSIBLE MUTUAL USE, i.e., TAX SERVICE, SILK SCREEN ARTIST.

NOTES:

FILE: PERSONNEL

SUBJECT OF DATA ELEMENT(S): BIOGRAPHIC

DATA ELEMENT NAME: COMMUNICATIONS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET ESTIMATE IN DOLLARS

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-ELEMENT

DATA ELEMENT NAME: COMPUTER-RESOURCES

ALIASES: COMPUTER-RESOURCES-REQUIRED

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: ESTIMATE OF COMPUTER RESOURCES IN TERMS OF DOLLARS DURING RESEARCH TASK.

NOTES:

DILE: RESEARCH PROPOSAL

DATA FLOW: RESEARCH PROPOSAL

DATA ELEMENT NAME: CONTINUING-EDUCATION-ACTIVITY

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: EFFORTS BY FACULTY FOR THE CONTINUING EDUCATION DEPARTMENT, EXPRESSED IN NARRATIVE TEXT.

NOTES:

FILE: FACULTY

DATA FLOW: FACULTY ACTIVITY REPORT

SUBSET OF DATA ELEMENT(S): INSTRUCTIONAL ACTIVITIES

DATA ELEMENT NAME: COST

ALIASES: PRICE, ACQUISITION COST

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: DOLLAR VALUATION ON COMMODITY OR SERVICE.

NOTES:

FILE: EQUIPMENT

DATA FLOW: LABOR SAVINGS DEVICE REPORT, MATERIAL TURN IN REQUEST, READY SUPPLY STORES REQUEST

DATA ELEMENT NAME: COSTC

ALIASES: COST CODE

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: ARBITRARY, UNIQUE DESIGNATION FOR A SPECIFIC, REIMBURSABLE FUND, i.e., RABCD

NOTES:

FILE: FACULTY, RESEARCH, SUPPORT-PERSONNEL-WORK-SCHEDULE

DATA FLOW: JOB-ORDER-CHARGES, AMONG OTHERS

SUBSET OF DATA ELEMENT(S): RESEARCH

DATA ELEMENT NAME: COURSE-COORDINATOR

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NAME OF PROFESSOR WHO IS ASSIGNED
THE TASK OF COORDINATING COURSE
MATERIALS AND INSTRUCTORS, I.E.,
BISHOP

NOTES:

FILE: COURSE

DATA FLOW: COURSE JOURNAL

DATA ELEMENT NAME: COURSE-HISTORY

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= {AY-ATR + COURSE-NUMBER + NO-STU + NO-SEGMENTS + GRADE-DISTRIBUTION + SOF + TEXTBOOK-USED + TEACHING-LOAD }

NOTES:

FILE: FACULTY

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): TEACHING

SECONDARY KEY

DATA ELEMENT NAME: COURSE-NAME

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: S.D.,I.E., FINANCIAL ACCOUNTING

NOTES:

FILE: COURSE

DATA FLOW: FACULTY COURSE DATA

SUBSET OF DATA ELEMENT(S): COURSES-OFFERED

DATA ELEMENT NAME: COURSE-NUMBER

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: ARBITRARY NUMBERING SYSTEM

6 CHARACTERS: AANNNN, I.E.,

AA, i.e., AS, IS, MN

NNNN, i.e., 3105, 4183

NOTES:

FILE: COURSE

DATA FLOW: FACULTY COURSE DATA, QUARTERLY COURSE LOAD

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY, COURSE-PREFERENCE, COURSES-OFFERED

DATA ELEMENT NAME: COURSE-PREFERENCE

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

{ COURSE-NUMBER + QUARTER-OFFERED + FREQUENCY-ASSIGNED}

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): TEACHING

DATA ELEMENT NAME: COURSE/LABORATORY-DEVELOPMENT

ALIASES:

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: NARRATIVE BY PROFESSOR DESCRIBING
ACTIVITIES IN COURSE DEVELOPMENT.

NOTES:

FILE: FACULTY

DATA FLOW: FACULTY ACTIVITY REPORT

SUBSET OF DATA ELEMENT(S): INSTRUCTIONAL-ACTIVITIES

DATA ELEMENT NAME: COURSES-OFFERED

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= 1{ AY-QTR + { COURSE-NAME + COURSE-NUMBER } } 4

NOTES:

SUBSET OF DATA ELEMENT(S): INSTRUCTIONAL-ACTIVITIES

DATA ELEMENT NAME: COURSES-REQUESTED

ALIASES:

ASSIGNED BY: INSTRUCTORS

VALUES AND MEANINGS:

= { COURSE-NAME + COURSE-NUMBER + { AY-QTR } }

NOTES:

FILE: FACULTY

DATA FLOW: PERSONAL PREFERENCE REPORT

DATA ELEMENT NAME: CPO-DATA

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= NAME + SSN + EMPLOYEE-NUMBER + AUTHORIZED-SIGNATURE + ACTIVITY-SERVICE-COMPUTATION-DATE + TYPE-APPOINTMENT + (LIMITED-APPOINTMENT) + (PROBATION-PERIOD)

NOTES:

FILE: PERSONNEL SECONDARY KEY

DATA ELEMENT NAME: CREDIT-HOURS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

2 NUMERIC CHARACTERS OF THE FORM X-Y, WHERE

X = NUMBER OF LECTURE HOURS PER WEEK, AND

Y = NUMBER OF LABORATORY HOURS PER WEEK.

NOTES:

THE NUMBER OF CREDITS EARNED BY A STUDENT IS CALCU-

BY THE EQUATION: CREDITS = X + 0.5Y

FILE: COURSE

DATA ELEMENT NAME: CURRICULUM

ALIASES:

ASSIGNED BY: PROVOST

VALUES AND MEANINGS: ARBITRARY, NUMERICAL DESIGNATION OF

A PROGRAM OF STUDY AT NPS, I.E.,

813 MATERIAL MOVEMENT

367 COMPUTER SYSTEMS MANAGEMENT

NOTES:

SUBSET OF DATA ELEMENT(S): SOF

DATA ELEMENT NAME: CURRICULUM-CODE

ALIASES:

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING

VALUES AND MEANINGS: CODE USED TO DESIGNATE THE CURRICULUM OF STUDENTS IN QUARTERLY PROJECTIONS, I.E.,

CODE	CURRICULUM
PL	367
CS	368
MF	813
MH	857
MT	814
MK	817(INTERNATIONAL)
MP	847
MR	815
MS	817(COAST GUARD)
MI	819
ME	817(USMC)
MV	827
MM	813
MO	817(ARMY)

NOTES:

DATA FLOW: ANNUAL/QUARTERLY COURSE LOAD

DATA ELEMENT NAME: CURRICULUM-DEGREE

ALIASES:

ASSIGNED BY: PROVOST

VALUES AND MEANINGS:

= CURRICULUM-CODE + DEGREE-CODE

DEGREE-CODE = MS

NOTES:

DATA FLOW: QUARTERLY-COURSE-LOAD

DATA ELEMENT NAME: DATE

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS: S.D.

NOTES:

FILE: OPTAR, RESEARCH

DATA FLOW: STATUS OF FUNDS REPORT AND MANY MORE

DATA ELEMENT NAME: DATE-OF-EQUIVALENT-INCREASE

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS:

=
[DATE-OF-INITIAL-APPOINTMENT]

NOTES:

DATA FLOW: SF-50

SUBSET OF DATA ELEMENT(S): NPS-PROMOTION-HISTORY

DATA ELEMENT NAME: DATE-OF-LAST-UPDATE

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: NUMERIC, 6 DIGITS, I.E., 101083

NOTES:

FILE: OPTAR, RESEARCH

DATA ELEMENT NAME: DATE-OF-RANK

ALIASES:

ASSIGNED BY: NAVY-MILITARY-PERSONNEL-COMMAND

VALUES AND MEANINGS: DATE THAT THE LATEST PROMOTION WAS

EFFECTIVE, I.E., 1 JUNE 71

NOTES:

SUBSET OF DATA ELEMENT(S): MILPERS-INFO

DATA ELEMENT NAME: DATES

ALIASES: INCLUSIVE-DATES

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: Self Defining, i.e.,

1 JULY 83 - 10 OCT 83

NOTES:

FILE: SUPPORT-PERSONNEL-WORK-SCHEDULE

DATA FLOW: JOB ORDER CHARGES

DATA ELEMENT NAME: DAYS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NUMERIC

NOTES:

DATA FLOW: JOB ORDER CHARGES

DATA ELEMENT NAME: DEGREE

ALIASES:

ASSIGNED BY: PROVOST

VALUES AND MEANINGS:

I.E. BS

MS

PHD

NOTES:

SUBSET OF DATA ELEMENT(S): DEGREE-HISTORY

DATA ELEMENT NAME: DEGREE-HISTORY

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= { DEGREE + MAJOR + INSTITUTION + YEAR-AWARDED }

NOTES:

FILE: PERSONNEL

DATA FLOW: PERSONAL BIOGRAPHY, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): BIOGRAPHIC

DATA ELEMENT NAME: DEMAND

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NUMBER OF UNITS (IN TERMS OF THE DEFINED UNIT OF ISSUE, I.E., "EACH") USED DURING THE CURRENT FISCAL YEAR

NOTES:

DEMAND IS INCREMENTED BY THE TOTAL CURRENT RECEIPT OF MATERIAL (IN SUPPLY TERMS - THE MATERIAL IS EXPENDED UPON RECEIPT). THIS DEMAND FIGURE, ALONG WITH THE "PREVIOUS DEMAND"FIGURE IS USED TO COMPLETE THE FOLLOWING YEAR'S BUDGET ESTIMATE. THE ACTUAL REORDER IS ACCOMPLISHED BY VISUAL INVENTORYING THE MATERIAL STOCK LOCATION.

FILE: SUPPLIES

DATA ELEMENT NAME: DEPT

ALIASES: DEPARTMENT; DEPARTMENT-OFFICE

ASSIGNED BY: ADMINISTRATIVE OFFICER

VALUES AND MEANINGS: NUMERICAL CODE, 2 DIGITS, INDICATING THE MAILING (ROUTING) CODE FOR THE DEPARTMENT, I.E.,

54 ADMINISTRATIVE SCIENCES DEPARTMENT

55 OPERATIONS RESEARCH DEPARTMENT

NOTES:

DATA FLOW: BUDGET REQUEST, LABOR SAVINGS DEVICES REPORT, PLANT ACCOUNT REPORT.

DATA ELEMENT NAME: DESCRIPTION

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

IN WORK REQUEST: DESCRIPTION OF THE WORK REQUESTED AND THE JUSTIFICATION FOR IT.

IN STATUS OF FUNDS REPORT: DESCRIPTION OF THE FINANCIAL OBLIGATION, I.E., 3M COMPANY TRANSPARANCIES, PROF SMITH TAD.

IN READY SUPPLY STORE REQUEST: DESCRIPTION OF ITEM OF

NOTES:

DATA FLOW: WORK REQUEST, STATUS OF FUNDS, READY SUPPLY STORE REQUEST.

SUBSET OF DATA ELEMENT(S): ITEM-DESCRIPTION, STOCK-NO-AND-DESCRIPTION.

DATA ELEMENT NAME: DESCRIPTION/BUDGET-ELEMENT

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= FACULTY-TAD + AACSB/NASPA-MEMBERSHIP-FEES +
UTILITIES-RENTAL-OF-EQUIPMENT + (COMMUNICATIONS) +
EQUIPMENT-MAINTENANCE + OTHER-PURCHASED-SERVICES +
SUPPLIES (<$200) + EQUIPMENT ($200>$<$3000) +
PURCHASED-PRINTING + TOTAL

NOTES:

DATA FLOW: BUDGET REQUEST

DATA ELEMENT NAME: DOCUMENT-NUMBER

ALIASES: STUB-NUMBER

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= SERVICE-CODE + REQUISITIONER + STUB-NUMBER

X SERVICE-CODE

62271 REQUISITIONER

NOTES:

SERIAL NUMBER SEQUENCE OF STUB-NUMBER IAW NPS NOTE 4235 (SERIES)

DATA ELEMENT NAME: EFFECTIVE-DATES

ALIASES:

ASSIGNED BY: DEAN OF ACADEMIC ADMINISTRATION

VALUES AND MEANINGS: INCLUSIVE DATES OF ACADEMIC QUARTER
LESS FINAL EXAM PERIOD.

NOTES:

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: EMPLOYEE-DATA

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

```
        SUPPORT-PERSONNEL
    = [                    ]
        FACULTY

  SUPPORT-PERSONNEL = NAME + BILLET-NO + PD/JD-NO +
                      POSITION-TITLE + GRADE-LEVEL +
                      TYPE-APPOINTMENT +
  FACULTY = PROF + ACADEMIC-DISCIPLINE + TYPE-APPOINTMENT
            + GRADE-LEVEL + POSITION-TITLE +
            LIMITED-APPOINTMENT LIMITED-APPOINTMENT.
```

NOTES:

DATA FLOW: RESOURCE DATA DISPLAY

DATA ELEMENT NAME: EMPLOYEE-NUMBER

ALIASES: PAY-NUMBER

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: ARBITRARY NUMBER TO IDENTIFY EMPLOYEE

I.E., A06555

NOTES:

FILE: BILLET, FACULTY, FACULTY EMPLOYMENT, SPACE, SUPPORT-PERSONNEL-WORK-SCHEDULE

DATA FLOW: OVERTIME REQUEST, TIME CARDS, JOB ORDER CARD

SUBSET OF DATA ELEMENT(S): CPO-DATA

DATA ELEMENT NAME: EMPLOYMENT-SCHEDULE

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= INCLUSIVE-DATES + FUNDING-SOURCE + NO-DAYS

I.E.,

01 OCT 82 - 11 JUN 83	(O MN)	181
12 JUN 83 - 01 AUG 83	(RGXWR)	36
02 AUG 83 - 31 SEP 83	(XXX)	44

XXX UNFUNDED, AS YET.

NOTES:

FILE: FACULTY EMPLOYMENT SCHEDULE

DATA FLOW: FACULTY EMPLOYMENT SCHEDULE

DATA ELEMENT NAME: EOQ

ALIASES: ECONOMIC ORDER QUANTITY

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: QUANTITY OF STOCK THAT MINIMIZES COSTS, USUALLY THE COST OF PROCUREMENT AND THE COST TO WAREHOUSE THE ITEM; IT IS EXPRESSED IN NUMERICS, PROBABLY LESS THAN 4 DIGITS.

NOTES:

STANDARD EOQ FORMULA FROM HADLEY AND WHITIN MAY BE USED

FILE: SUPPLIES

DATA ELEMENT NAME: EQUIPMENT (\$200>\$<\$3000)

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET LINE ITEM, EXPRESSED IN DOLLARS

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-ELEMENT, ITEMS.

DATA ELEMENT NAME: EQUIPMENT-DATA

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= NOMENCLATURE + MAKE/MODEL + SERIAL-NUMBER + PLANT-ACCOUNT-NUMBER

NOTES:

SUBSET OF DATA ELEMENT(S): SPACE-DATA

DATA ELEMENT NAME: EQUIPMENT-MAINTENANCE

ALIASES: MAINTENANCE

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET LINE ITEM EXPRESSED IN DOLLARS;

IT IS THE CONTRACT VALUE FOR AN OUTSIDE AGENCY TO PERFORM THE MAINTENANCE ON THE DEPARTMENT'S EQUIPMENT.

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-ELEMENT, ITEMS

DATA ELEMENT NAME: ESTIMATED-COST

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= TRANSPORTATION-COST + PER-DIEM + MISC-EXP

NOTES:

DATA FLOW: TRAVEL ORDERS

DATA ELEMENT NAME: EXAM-WEEK

ALIASES: FINAL-EXAM-PERIOD

ASSIGNED BY: DEAN OF ACADEMIC ADMINISTRATION

VALUES AND MEANINGS: INCLUSIVE DATES OF EXAM WEEK, I.E.,

23 - 29 SEPTEMBER.

NOTES:

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: EXPIRES

ALIASES:

ASSIGNED BY: DEAN OF RESEARCH

VALUES AND MEANINGS: DATE AFTER WHICH OBLICATIONS AGAINST A RESEARCH ACCOUNT MAY NOT BE MADE: EXPRESSED AS A CALENDAR DATE, I.E., 1 OCT 1985.

NOTES:

FILE: RESEARCH

SUBSET OF DATA ELEMENT(S): RESEARCH

DATA ELEMENT NAME: FAC-HRS

ALIASES: FACULTY-HOURS

ASSIGNED BY: DEAN OF ACADEMIC PLANNING

VALUES AND MEANINGS: NUMERIC, 1 OR 2 DIGITS: FORECAST OF THE NUMBER OF FACULTY TEACHING HOURS REQUIRED FOR A SPECIFIC COURSE.

NOTES:

DATA FLOW: ANNUAL COURSE LOAD

DATA ELEMENT NAME: FACULTY

ALIASES: PROF, FACULTY-MEMBER

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: LAST NAME (FIRST NAME/INITIALS ARE OPTIONAL) OF INSTRUCTOR.

NOTES: MOST NAMES LISTED UNDER DATA ELEMENT ENTITLED "PROF"

DATA FLOW: FACULTY CERTIFICATION REPORT, FACULTY EMPLOYMENT SCHEDULE

DATA ELEMENT NAME: FACULTY-APPOINTMENTS-CURRENT-RANK

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: NUMERIC INDICATING THE NUMBER OF TIMES THAT A PROFESSOR HAS BEEN APPOINTED TO HIS CURRENT POSITION.

NOTES:

FILE: FACULTY

DATA FLOW: CPO-LISTING, FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: FACULTY-INITIAL-RANK

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: THE FACULTY RANK OF AN INSTRUCTOR WHEN FIRST EMPLOYED AT NPS, I.E., ASSOCIATE PROFESSOR.

NOTES:

FILE: FACULTY

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: FACULTY-TAD

ALIASES: TRAVEL (NPS)

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET LINE ITEM FOR FACULTY TRAVEL,
EXPRESSED IN DOLLARS.

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-ELEMENT, ITEMS

DATA ELEMENT NAME: FACULTY-YEARS-OF-EXPERIENCE

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: NUMERIC LESS THAN 3 DIGITS.

NOTES:

FILE: FACULTY

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: FINAL-EXAM

ALIASES:

ASSIGNED BY: DEAN OF ACADEMIC ADMINISTRATION

VALUES AND MEANINGS: GIVES THE TIME AND LOCATION OF THE FINAL EXAM DURING EXAM WEEK.

FINAL-EXAM = PERIOD + ROOM

I.E.,

1,2 EXAM I-288

NOTES:

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: FINAL-EXAM-PERIOD

ALIASES: EXAM-WEEK

ASSIGNED BY: DEAN OF ACADEMIC ADMINISTRATION

VALUES AND MEANINGS: INCLUSIVE DATES, AT THE END OF A QUARTER, THAT FINAL EXAMS MAY BE SCHEDULED, I.E., 20 - 26 SEPTEMBER 1983.

NOTES:

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: FIRM

ALIASES:

ASSIGNED BY: EMPLOYEE

VALUES AND MEANINGS: NAME OF THE COMMERCIAL ESTABLISHMENT
WHERE THE EMPLOYEE WAS FORMERLY EMPLOYED, I.E.,
WESTINGHOUSE.

NOTES:

SUBSET OF DATA ELEMENT(S): WORK-HISTORY

DATA ELEMENT NAME: FREQUENCY-ASSIGNED

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: THE NUMBER OF TIMES THAT A SPECIFIC INSTRUCTOR HAS BEEN ASSIGNED TO TEACH A SPECIFIC COURSE.

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): COURSE-PREFERENCE

DATA ELEMENT NAME: FUNDING-SOURCE

ALIASES:

ASSIGNED BY: COMPTROLLER/DEPARTMENT

VALUES AND MEANINGS: THE FINANCIAL ACCOUNT THAT MAY BE CHARGED FOR A FINANCIAL OBLIGATION, I.E., WAGES.

EXAMPLES:

FOUND	NPS RESEARCH FOUNDATION
RABCD	REIMBURSABLE SPONSOR, I.E., OFFICE OF NAVAL RESEARCH
XXX	UNFUNDED

NOTES:

DATA FLOW: FACULTY EMPLOYMENT SCHEDULE

SUBSET OF DATA ELEMENT(S): EMPLOYMENT-SCHEDULE

DATA ELEMENT NAME: FURNITURE/SIGNS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET ELEMENT FOR A PARTICULAR

CATEGORY OF EXPENSE, EXPRESSED IN DOLLARS.

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): ITEMS

DATA ELEMENT NAME: GRADE-DISTRIBUTION

ALIASES:

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: SHOWS THE DISTRIBUTION OF GRADES FOR A SPECIFIC COURSE.

GRADE-DISTRIBUTION = A + A- + B+ + B + B- + C+ + C + C- + D+ + D + X + COMPOSITE-QPR

NOTES:

DATA FLOW: COURSE JOURNAL, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY

DATA ELEMENT NAME: GRADE-LEVEL

ALIASES: PAY-GRADE

ASSIGNED BY: DEPARTMENT/CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: NUMERICAL DESIGNATION OF EMPLOYEE'S PAY LEVEL, I.E., 07, 11.

NOTES:

DATA FLOW: SF-50, CPO-LISTING, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): EMPLOYEE-DATA, NPS-PROMOTION-HISTORY

DATA ELEMENT NAME: HPW

ALIASES: HOURS-PER-WEEK

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: THE NUMBER OF HOURS PER WEEK THAT A SUPPORT PERSON WILL WORK.

NOTES:

FILE: SUPPORT-PERSONNEL-EMPLOYMENT-SCHEDULE

DATA FLOW: JOB ORDER CHARGES

DATA ELEMENT NAME: INCLUSIVE-DATES

ALIASES: DATES

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: THE BEGINNING AND ENDING DATES FOR AN EVENT OR SERIES OF EVENTS.

INCLUSIVE-DATES = DAY + MONTH + YEAR - DAY +MONTH+YEAR

NOTES:

DATA FLOW: FACULTY EMPLOYMENT SCHEDULE, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): EMPLOYMENT-SCHEDULE, PREVIOUS-ACADEMIC-ASSIGNMENTS, PROFESSIONAL, WORK-HISTORY.

DATA ELEMENT NAME: INCLUSIVE-TIMES

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BEGINNING AND ENDING TIME FOR AN EVENT

= HOUR + DATE - HOUR + DATE, I.E.,

1630, 27 OCT - 2030, 27 Oct 1983

NOTES:

DATA FLOW: OVERTIME REQUEST

DATA ELEMENT NAME: INSTITUTION

ALIASES:

ASSIGNED BY: DEPARTMENT, EMPLOYEE

VALUES AND MEANINGS: NAME OF ACADEMIC ORGANIZATION, I.E.,

STANFORD, UNIVERSITY OF CALIFORNIA, BERKLEY.

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): DEGREE-HISTORY, PREVIOUS-ACADEMIC-ASSIGNMENTS, WORK-HISTORY

DATA ELEMENT NAME: INSTRUCTIONAL-ACTIVITIES

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= { COURSES-OFFERED } + { COURSE/LABORATORY-DEVELOPMENT}
+ { CONTINUING-EDUCATION-ACTIVITY } + { THESIS } +
+ { SELF-IMPROVEMENT-EFFORTS }

NOTES:

DATA FLOW: FACULTY ACTIVITY REPORT

DATA ELEMENT NAME: ISSUE/TURN-IN

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

ISSUE = MATERIAL REQUEST TO OBTAIN OFFICE SUPPLIES.

TURN-IN = MATERIAL BEING RETURNED FOR CREDIT.

NOTES:

DATA FLOW: READY SUPPLY STORE REQUEST

DATA ELEMENT NAME: ITEM

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: SUBSIDIARY CATEGORY OF FINANCIAL OBLIGATIONS

1 MAINTENANCE

2 SUPPLIES

3 FURNITURE/SIGNS

4 TRAVEL (NPS)

5 ASSOCIATION-FEES

6 RECRUITING

7 SUBSCRIPTIONS/BOOKS

8 DEPT-NEWSLETTER

9 EQUIPMENT

10 ADMIN-SUPPORT

11 SEC-SUPPORT

12 RESEARCH-TAPES

NOTES:

CURRENT MANUAL LEDGER ARE SUBDIVIDED INTO SUBSIDIARY LEDGERS.

FILE: OPTAR

DATA ELEMENT NAME: ITEM-DESCRIPTION

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS:

= DESCRIPTION + RESEARCH-ACCOUNT, I.E.,

OFFICE PRODUCTS FROM ELSTER4

NOTES:

FILE: OPTAR, RESEARCH

DATA FLOW: STATUS OF FUNDS REPORT

DATA ELEMENT NAME: ITEMS

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= MAINTENANCE + SUPPLIES + (FURNITURE/SIGNS) + FACULTY-TAD + AACSB/NASPA-MEMBERSHIP-FEES + SUBSCRIPTION/BOOKS + EQUIPMENT + ADMIN-SUPPORT

NOTES: THIS DATA ELEMENT IS A COMPOSITE OF THE PREVIOUS DATA ELEMENT CALLED ITEM, WHICH COULD BE ONE OF MANY OF THE ITEMS.

DATA FLOW: BUDGET REQUEST, OPTAR BUDGET EXPENDITURES

DATA ELEMENT NAME: JOB-ORDER-NUMBER

ALIASES: COSTC, SUPPLEMENTARY-ADDRESS

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: UNIQUE ALPHA CHARACTERS, DESIGNATING
FINANCIAL ACCOUNT

ABCDE

RDDCC

NOTES:

DATA FLOW: JOB ORDER CARD, OVERTIME REQUEST,
REQUISITIONS

DATA ELEMENT NAME: JUL

ALIASES: JULIAN-DATE

ASSIGNED BY: DEPARTMENT, COMPTROLLER

VALUES AND MEANINGS: JULIAN DATE OF TRANSACTION

JULIAN-DATE = XYYY

X = LAST DIGIT OF CALENDAR YEAR

YYY = SEQUENTIAL DAY OF THE YEAR

I.E.,

4031 = 31 JANUARY 1984

3235 = 23 AUGUST 1983

NOTES: INDICATES THE DATE THAT THE REQUISITION WAS SUBMITTED, OR THE DATE OF THE LAST UPDATE OF THE RECORD

DATA FLOW: REQUISITION, SPACE-UTILIZATION-REPORT

SUBSET OF DATA ELEMENT(S): DOCUMENT-NUMBER

DATA ELEMENT NAME: JUSTIFICATION

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NARRATIVE THAT SUPPLIES REASON(S) FOR AN ACTION.

NOTES:

DATA FLOW: OVERTIME REQUEST, RESEARCH PROPOSAL

DATA ELEMENT NAME: KLMNOP

ALIASES:

ASSIGNED BY: FACILITIES PLANNING BOARD

VALUES AND MEANINGS: COLUMN HEADING OF REPORT TO INDICATE
THE RESPONSIBLE DEPARTMENT, I.E.,
PW
A/S
COMCEN
EDMEDIA

NOTES:

DATA FLOW: SPACE UTILIZATION REPORT

DATA ELEMENT NAME: LABOR

ALIASES:

ASSIGNED BY: DEPARTMENT/PROFESSOR

VALUES AND MEANINGS: AMOUNT OF DOLLARS ESTIMATED AS BEING NECESSARY TO CONDUCT THE RESEARCH ACTIVITY.

NOTES:

FILE: RESEARCH

DATA FLOW: RESEARCH PROPOSAL

DATA ELEMENT NAME: LABORATORY-SPACE

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: ESTIMATE OF NPS RESOURCES REQUIRED
TO CONDUCT RESEARCH; EXPRESSED IN DOLLARS.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: RESEARCH PROPOSAL

DATA ELEMENT NAME: LEAVE-HOURS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NUMBER OF HOURS OF LEAVE TAKEN BY AN EMPLOYEE.

NOTES:

DATA FLOW: TIME CARD, JOB ORDER CARD

DATA ELEMENT NAME: LIBRARY-RESOURCES-REQR

ALIASES: LIBRARY-RESOURCES-REQUIRED

ASSIGNED BY: DEPARTMENT/PROFESSOR

VALUES AND MEANINGS: NPS LIBRARY RESOURCES REQUIRED TO CONDUCT RESEARCH, EXPRESSED IN DOLLARS.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: RESEARCH PROPOSAL

DATA ELEMENT NAME: LIMITED-APPOINTMENTS

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: EXPIRATION DATE OF APPOINTMENT TO A TEMPORARY, CIVILIAN POSITION.

= YEAR + MONTH + DAY, I.E., 831115

NOTES:

DATA FLOW: SF-50, CPO-LISTING, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): CPO-DATA, EMPLOYEE-DATA

DATA ELEMENT NAME: LINEAL-NUMBER

ALIASES:

ASSIGNED BY: NAVAL MILITARY PERSONNEL COMMAND

VALUES AND MEANINGS: UNIQUE NUMBER, ASSIGNED TO A MILITARY OFFICER TO INDICATE THE OFFICER'S RELATIVE RANKING WITHIN THE SERVICE: NUMERIC, 7 DIGITS OR LESS.

NOTES:

DATA FLOW: MILPERS DATA

SUBSET OF DATA ELEMENT(S): MILPERS-INFO

DATA ELEMENT NAME: LOCATION

ALIASES: SPACE

ASSIGNED BY: PUBLIC WORKS

VALUES AND MEANINGS:

LOCATION = [BLDG-NO + ROOM | BLDG-ABBREVIATION + ROOM]

I.E., 330-206

I -206

BUILDING	BUILDING-ABBREVIATION	BUILDING-NO
INGERSOLL	I	330
ROOT	R	235
SPANAGEL	SP	232
HERRMANN	HE	220

NOTES:

FILE: EQUIPMENT, SPACE

DATA FLOW: LABOR SAVINGS DEVICE REPORT, SPACE UTILIZATION REPORT, OVERTIME REQUEST, MATERIAL TURN-IN REQUEST, PLANT ACCOUNT REPORT

SUBSET OF DATA ELEMENT(S): AVAILABLE SPACE DATA, SPACE DATA

DATA ELEMENT NAME: MAJOR

ALIASES:

ASSIGNED BY: UNIVERSITY

VALUES AND MEANINGS: ACADEMIC EMPHASIS AREA, I.E.,

ECONOMICS,

OPERATIONS RESEARCH.

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): DEGREE-HISTORY

DATA ELEMENT NAME: MAKE/MODEL

ALIASES:

ASSIGNED BY: MANUFACTURER

VALUES AND MEANINGS: MEANS OF IDENTIFYING A PARTICULAR BRAND/TYPE OF EQUIPMENT; CAN BE OF VARIOUS ALPHA-NUMERIC CONFIGURATIONS, DEPENDING ON THE MANUFACTURER'S NUMBERING SCHEME.

NOTES:

FILE: EQUIPMENT

DATA FLOW: LABOR SAVINGS DEVICE REPORT

SUBSET OF DATA ELEMENT(S): EQUIPMENT-DATA

DATA ELEMENT NAME: MAN-YEARS

ALIASES:

ASSIGNED BY: DEAN OF ACADEMIC PLANNING

VALUES AND MEANINGS: STAFFING AUTHORIZATION FOR ONE PERSON OVER A YEAR'S TIME.

NOTES:

DATA FLOW: BILLET LISTING

DATA ELEMENT NAME: MARITAL-STATUS

ALIASES:

ASSIGNED BY: EMPLOYEE

VALUES AND MEANINGS: INDICATES IF AN EMPLOYEE IS MARRIED OR NOT AND, POSSIBLY, THE NUMBER OF CHILDREN, I.E.,

W2DC = WIFE AND 2 DEPENDENT CHILDREN.

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY, FACULTY AVAILABILITY REPORT.

SUBSET OF DATA ELEMENT(S): BIO-DATA, BIOGRAPHIC

DATA ELEMENT NAME: MEAN

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

	QUESTION	N/A	1	2	3	4	5	MEAN	SD
1	THE COURSE WAS WELL ORGANIZED	0	0	0	1	4	3	4.25	0.66
2	TIME IN THE CLASS WAS SPENT EFFECTIVELY	0	0	0	0	6	2	4.25	0.43
3	INSTRUCTOR SEEMED TO KNOW WHEN STUDENTS DID NOT UNDERSTAND THE MATERIAL	0	0	0	0	6	2	4.25	0.43
4	DIFFICULT CONCEPTS WERE MADE UNDERSTANDABLE	0	0	1	2	3	2	3.75	0.97
5	I HAD CONFIDENCE IN THE INSTRUCTORS KNOWLEDGE OF THE SUBJECT	0	0	0	0	6	2	4.25	0.43
6	I FELT FREE TO ASK QUESTIONS	0	0	0	0	2	6	4.75	0.43
7	INSTRUCTOR WAS PREPARED FOR CLASS	0	0	0	0	5	3	4.38	0.48
8	THE INSTRUCTOR OBJECTIVES FOR THE COURSE HAVE BEEN MADE CLEAR	0	0	1	0	4	3	4.13	0.93
9	THE INSTRUCTOR MADE THIS COURSE A WORTHWHILE LEARNING EXPERIENCE	0	0	0	2	4	2	4.00	0.71
10	THE INSTRUCTOR STIMULATED MY INTEREST IN THE SUBJECT AREA	0	0	0	4	3	1	3.63	0.70
11	INSTRUCTOR CARED ABOUT STUDENT PROGRESS AND DID HIS SHARE IN HELPING US TO LEARN	0	0	0	0	3	5	4.63	0.48

NOTES: TABULATION OF SOF DATA

DATA FLOW: SOF-DATA

SUBSET OF DATA ELEMENT(S): SOF

The above is an explanation of a portion of a typical SOF Data Report.

DATA ELEMENT NAME: MEAN (Q 1-Q11)

ALIASES:

ASSIGNED BY

VALUES AND MEANINGS: MEAN OF 11 SOF QUESTIONS

I.E.,

Q1 TO Q11 MEAN 4.20

NOTES: SUMMARY OF SOF DATA FOR THE FIRST 11 QUESTIONS

DATA FLOW: SOF-DATA

SUBSET OF DATA ELEMENT(S): SOF

DATA ELEMENT NAME: MEAN (Q12)

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

#	QUESTION	N/A	P	F	A	E	O	MEAN	S.D.
12	OVERALL, I WOULD RATE THE INSTRUCTOR	0	0	0	1	4	3	4.25	0.66

NOTES:

DATA FLOW: SOF-DATA

SUBSET OF DATA ELEMENT(S): SOF

DATA ELEMENT NAME: MEAN (Q13)

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

#	QUESTION								
13	OVERALL, I WOULD RATE THIS COURSE	0	0	0	2	5	1	3.88	0.60

NOTES:

DATA FLOW: SOF-DATA

SUBSET OF DATA ELEMENT(S): SOF

DATA ELEMENT NAME: MILITARY-FACULTY

ALIASES:

ASSIGNED BY: DEAN OF ACADEMIC PLANNING/DEPARTMENT

VALUES AND MEANINGS: NAMES OF THE MILITARY FACULTY, I.E.,

GUYER

LAMM

FERRIS

NOTES:

DATA FLOW: BILLET LISTING

DATA ELEMENT NAME: MILPERS-INFO

ALIASES:

ASSIGNED BY: NAVY MILITARY PERSONNEL COMMAND

VALUES AND MEANINGS:

= { RANK + SALARY + ({ PREVIOUS-ASSIGNMENTS}) + LINEAL-NO + DATE-OF-RANK + ROTATION-DATE }

NOTES:

FILE: PERSONNEL

DATA ELEMENT NAME: MQ

ALIASES: MAN-QUARTERS; DEPARTMENT-REIMBURSABLE-MAN-QUARTERS-PROJECTED

ASSIGNED BY: DEAN OF ACADEMIC PLANNING

VALUES AND MEANINGS: NUMERIC- NUMBER OF DIGITS NECESSARY TO PROJECT THE NUMBER OF EQUIVALENT INSTRUCTORS NEEDED PER QUARTER.

NOTES:

FILE: FACULTY EMPLOYMENT SCHEDULE

DATA FLOW: FACULTY EMPLOYMENT WORKSHEET

DATA ELEMENT NAME: NAME

ALIASES: PROF (FOR INSTRUCTORS)

ASSIGNED BY: EMPLOYEE

VALUES AND MEANINGS:

NAME = LAST-NAME + FIRST-NAME + MIDDLE-NAME

NOTES:

DATA FLOW: JOB ORDER CHARGES, JOB ORDER CARD, TIME CARD, OVERTIME REQUEST

SUBSET OF DATA ELEMENT(S): CPO-DATA, EMPLOYEE-DATA

DATA ELEMENT NAME: NCC

ALIASES: NAVY-CATEGORY-CODE

ASSIGNED BY: PUBLIC WORKS

VALUES AND MEANINGS: ARBITRARY NUMERIC CODE ASSIGNED TO A SPACE TO INDICATE THE TYPE OF ASSIGNMENT, I.E.,

171-30

610-10

NOTES:

DATA FLOW: SPACE UTILIZATION REPORT

DATA ELEMENT NAME: NO-DAYS

ALIASES: NUMBER-OF-DAYS

ASSIGNED BY:

VALUES AND MEANINGS:

TRAVEL-ORDERS = TRAVEL-DAYS + TEMPORARY-DUTY-DAYS +
WEEKEND + LEAVE

FACULTY-EMPLOYMENT-SCHEDULE = ACTUAL NUMBER OF DAYS

NOTES:

DATA FLOW: TRAVEL ORDERS, FACULTY EMPLOYMENT SCHEDULE

SUBSET OF DATA ELEMENT(S): EMPLOYMENT-SCHEDULE

DATA ELEMENT NAME: NO-HOURS

ALIASES: NUMBER-OF-HOURS

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: ACTUAL NUMBER OF HOURS REQUESTED

NOTES:

DATA FLOW: OVERTIME REQUEST

DATA ELEMENT NAME: NO-SEGMENTS

ALIASES: NUMBER OF SEGMENTS

ASSIGNED BY:

VALUES AND MEANINGS: THE NUMBER OF INDIVIDUAL SEGMENTS OF A SPECIFIC COURSE THAT WAS OFFERED.

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT, FACULTY COURSE DATA

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY

DATA ELEMENT NAME: NO-STU

ALIASES: NUMBER-OF-STUDENTS

ASSIGNED BY: DEAN OF ACADEMIC ADMINISTRATION

VALUES AND MEANINGS: THE NUMBER OF STUDENTS THAT ARE PROJECTED BY THE CURRICULUAR OFFICER TO BE ENROLLED IN THE SUBSEQUENT QUARTER(S).

NOTES:

DATA FLOW: ANNUAL/QUARTERLY-COURSE-LOAD

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY

DATA ELEMENT NAME: NOMENCLATURE

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: THE NAME OF AN ITEM OF SUPPLY OR A PIECE OF EQUIPMENT.

NOTES:

FILE: EQUIPMENT, SUPPLIES

DATA FLOW: LABOR SAVINGS DEVICE REPORT, MATERIAL TURN IN REQUEST, PLANT ACCOUNT REPORT

SUBSET OF DATA ELEMENT(S): EQUIPMENT-DATA

DATA ELEMENT NAME: NPS-PROMOTION-HISTORY

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS:

= { GRADE-LEVEL + SALARY-STEP + SALARY + DATE-OF-EQUIVALENT-INCREASE}

NOTES:

FILE: PERSONNEL

DATA FLOW: FACULTY AVAILABILITY REPORT, SF-52

DATA ELEMENT NAME: NSN

ALIASES: NATIONAL-STOCK-NUMBER

ASSIGNED BY: DEFENSE LOGISTICS SERVICE CENTER

VALUES AND MEANINGS:

= FEDERAL-SUPPLY-CLASS + COUNTRY-CODE + NATIONAL-ITEM-IDENTIFIER (OR NIIN)

FEDERAL-SUPPLY-CLASS = NNNN, I.E., 7430

COUNTRY-CODE = 00 , OR 01.

NIIN = NNN-NNNN

NOTES:

FILE: EQUIPMENT, SUPPLIES

DATA FLOW: LABOR SAVINGS DEVICE REPORT, PLANT ACCOUNT REPORT, REQUISITION

SUBSET OF DATA ELEMENT(S): STOCK-NUMBER-AND-DESCRIPTION

DATA ELEMENT NAME: O&MN-CIVILIAN-FACULTY

ALIASES:

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING

VALUES AND MEANINGS: NAMES OF CIVILIAN FACULTY AUTHORIZED BY THE DIRECTOR OF ACADEMIC PLANNING THAT CAN BE USED BY THE DEPARTMENT.

NOTES:

DATA FLOW: BILLET LISTING

DATA ELEMENT NAME: OBLIGATION

ALIASES:

ASSIGNED BY: DEPARTMENT/COMPTROLLER

VALUES AND MEANINGS: AMOUNT OF THE FINANCIAL TRANSACTION FOR THAT DATE. THE DEPARTMENT INITIALLY OBLIGATES A SPECIFIC AMOUNT OF MONEY FOR A TRANSACTION, I.E., TRAVEL, MAGAZINE SUBSCRIPTIONS, BUT THE ACTUAL AMOUNT THAT IS CHARGED MAY BE DIFFERENT. WHEN THE "BILL" IS PAID, THE COMPTROLLER WILL ADJUST THE FINANCIAL RECORDS.

NOTES:

INITIAL OBLIGATION DECREMENTS ACCOUNT-BALANCE

FILE: OPTAR, RESEARCH

DATA FLOW: STATUS OF FUNDS REPORT

DATA ELEMENT NAME: OCCUPATIONAL-SERIES-CODE

ALIASES: OCC

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: ARBITRARY NUMERIC CODE THAT IS
ASSIGNED TO A CIVIL SERVICE SKILL CATEGORY, I.E.,
203 - STAFFING CLERK

NOTES:

DATA FLOW: CPO LISTING

DATA ELEMENT NAME: OFFICE-SPACE

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: DOLLAR VALUE OF SPACE REQUIRED TO CONDUCT RESEARCH.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: RESEARCH PROPOSAL

DATA ELEMENT NAME: OTHER-NPS-RESOURCE-REQR

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: DOLLAR VALUE OF RESOURCES REQUIRED

TO CONDUCT RESEARCH THAT IS NOT ATTRIBUTABLE TO:

OFFICE SPACE,

LIBRARY RESOURCES, OR

COMPUTER RESOURCES.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: RESEARCH PROPOSAL

DATA ELEMENT NAME: OTHER-PROFESSIONAL-ACTIVITIES-EXTERNAL-TO-NPS

ALIASES: PROFESSIONAL

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: NARRATIVE ASSIGNED BY THE PROFESSOR TO THE REPORT TO INDICATE PROFESSIONAL ACTIVITIES NOT NECESSARILY RELATED TO NPS.

NOTES:

FILE: FACULTY

DATA FLOW: FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: OTHER-PURCHASED-SERVICES

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET ELEMENT FOR PROCURRED SERVICES
NOT OTHERWISE IN A CATEGORY.

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-ELEMENT

DATA ELEMENT NAME: OVERTIME-HOURS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NUMBER OF HOURS REQUESTED BY THE DEPARTMENT FOR SUPPORT PERSONNEL.

NOTES:

DATA FLOW: OVERTIME REQUEST

SUBSET OF DATA ELEMENT(S): ACTUAL-HOURS

DATA ELEMENT NAME: P.O. BOX

ALIASES:

ASSIGNED BY: POSTAL SERVICE/EMPLOYEE

VALUES AND MEANINGS: NUMERIC DESIGNATION OF POSTAL DELIVERY ADDRESS.

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): ADDRESS

DATA ELEMENT NAME: PAY-BASIS

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: ALPHA CODE ASSIGNED TO INDICATE THE TIME PERIOD BY WHICH PERSONNEL ARE PAID:

PA	PER ANNUM
PH	PER HOUR
PD	PER DAY
WC	WITHOUT COMPENSATION

NOTES:

DATA FLOW: CPO LISTING

DATA ELEMENT NAME: PAY-PLAN

ALIASES:

ASSIGNED BY: DEPARTMENT/CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: ARBITRARY CODE (ALPHA CHARACTERS)
INDICATING THE BASIC PAY PLAN BY WHICH PERSONNEL
WAGES ARE DETERMINED:

AD	ADMINISTRATIVELY DETERMINED
GS	GENERAL SCHEDULE
GM	MERIT PAY SYSTEM
YV	SUMMER AID
YW	STUDENT AID

NOTES:

DATA FLOW: CPO LISTING

DATA ELEMENT NAME: PD/JD-NO

ALIASES: POSITION-DESCRIPTION/JOB-DESCRIPTION-NUMBER

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: 4 NUMERIC CHARACTERS UNIQUELY IDENTIFYING A CIVIL SERVICE POSITION

NOTES:

FILE: BILLET

DATA FLOW: CPO LISTING, SF-50

SUBSET OF DATA ELEMENT(S): EMPLOYEE-DATA

DATA ELEMENT NAME: PERIOD

ALIASES:

ASSIGNED BY: DEAN OF ACADEMIC ADMINISTRATION

VALUES AND MEANINGS:

PERIOD	TIME
1	0810-0900
2	0910-1000
3	1010-1100
4	1110-1200
5	1210-1300
6	1310-1400
7	1410-1500
8	1510-1600
9	1610-1700

NOTES:

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: PERIOD-ENDING

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: DATE THAT A PAY PERIOD ENDS, I.E.,
10/30/83

NOTES:

DATA FLOW: TIME CARDS

DATA ELEMENT NAME: PLANS-FOR-198X

ALIASES:

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS:

= { ACADEMIC } + { RESEARCH } + { ADMINISTRATION/GOVERN-
ANCE} + { PROFESSIONAL }

NOTES:

FILE: FACULTY

DATA FLOW: FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: PLANT-ACCOUNT-NUMBER

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: UNIQUE NUMERIC ASSIGNED TO EQUIPMENT,
I.E., 54-4205

NOTES:

FILE: EQUIPMENT, SPACE

DATA FLOW: LABOR SAVINGS DEVICE REPORT, PLANT ACCOUNT REPORT

SUBSET OF DATA ELEMENT(S): EQUIPMENT-DATA

DATA ELEMENT NAME: POSITION-STATUS

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS:

CODE	DEFINITION
P	PERMANENT
T	TEMPORARY

NOTES:

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: POSITION-TITLE

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: PLAIN TEXT TITLE OF POSITION, I.E.,

ADJT PROF ADMIN SCI

ASSOC PROF ECONOMICS

NOTES:

FILE: BILLET

DATA FLOW: SF-50, CPO LISTING, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): EMPLOYEE DATA, PREVIOUS-ACADEMIC-ASSIGNMENTS, WORK-HISTORY

DATA ELEMENT NAME: PREVIOUS-ACADEMIC-ASSIGNMENTS

ALIASES:

ASSIGNED BY: PROFESSOR

VALUES AND MEANINGS:

= { INSTITUTION + POSITION-TITLE + INCLUSIVE-DATES }

NOTES:

FILE: FACULTY

DATA FLOW: PERSONAL BIOGRAPHY, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): BIOGRAPHIC

DATA ELEMENT NAME: PREVIOUS-ASSIGNMENT

ALIASES:

ASSIGNED BY: NAVAL MILITARY PERSONNEL COMMAND

VALUES AND MEANINGS: NAMES AND INCLUSIVE DATES OF PREVIOUS MILITARY ASSIGNMENTS, I.E.,

7/73 - 10/75	NPS
11/75 - 05/77	AVIATION SUPPLY OFFICE
06/77 - 02/79	MAAG, IRAN
03/79 - 10/80	DEFENSE LOGISTICS ANALYSIS OFFICE

NOTES:

FILE: PERSONNEL

DATA FLOW: MILPERS DATA

DATA ELEMENT NAME: PREVIOUS-DEMAND

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: DEMAND FOR SUPPLIES EXPERIENCED IN THE PREVIOUS FISCAL YEAR.

NOTES:

FILE: SUPPLIES

DATA ELEMENT NAME: PRINCIPLE-INVESTIGATOR

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NAME OF PROFESSOR ASSIGNED TO PERFORM LEADING EFFORT IN RESEARCH TASK, I.E.,

BOGER

EUSKE

NOTES:

FILE: RESEARCH PROPOSAL

DATA ELEMENT NAME: PROBATION-PERIOD

ALIASES:

ASSIGNED BY: DEPARTMENT/CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: ENDING DATE OF PROBATION FOR A CIVIL SERVICE EMPLOYEE, I.E.,

YYMMDD, 831208

NOTES:

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): EMPLOYEE-DATA

DATA ELEMENT NAME: PROF

ALIASES: PROFESSOR, PROF-NAME

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

MASTER SCHEDULE

PROF = CODE + NAME + DEPARTMENT

CODE	NAME	DEPARTMENT
Bi	CDR BISHOP	AS
Bk	PROF BOGER	AS
Rh	PROF RICHARDS	OR

NOTES:

FILE: COURSE

DATA FLOW: MASTER SCHEDULE

SUBSET OF DATA ELEMENT(S): EMPLOYEE-DATA

DATA ELEMENT NAME: PROFESSIONAL

ALIASES: OTHER-PROFESSIONAL-ACTIVITIES-EXTERNAL-TO-NPS

ASSIGNED BY: PROFESSOR

VALUES AND MEANINGS:

= { SPONSOR + ACTIVITY-NATURE + INCLUSIVE-DATES +
REMARKS }

NOTES:

FILE: FACULTY
DATA FLOW: FACULTY AVAILABILITY REPORT
SUBSET OF DATA ELEMENT(S): ACADEMIC-HISTORY
SECONDARY KEY

DATA ELEMENT NAME: PROPOSAL-DATE

ALIASES:

ASSIGNED BY: DEPARTMENT/PRINCIPLE INVESTIGATOR

VALUES AND MEANINGS: DATE THAT RESEARCH PROPOSAL IS FORWARDED.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): RESEARCH

DATA ELEMENT NAME: PROPOSED-EFFECTIVE-DATE

ALIASES:

ASSIGNED BY: DEPARTMENT/PRINCIPLE INVESTIGATOR

VALUES AND MEANINGS: DATE THAT RESEARCH TASKING SHOULD START.

NOTES:

FILE: RESEARCH PROPOSAL

DATA ELEMENT NAME: PUBLISH-DATE

ALIASES:

ASSIGNED BY: PROFESSOR/PUBLISHER

VALUES AND MEANINGS: DATE THAT PUBLICATION SHOULD BE/WAS PUBLISHED.

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): PUBLISHING

DATA ELEMENT NAME: PUBLISHER

ALIASES:

ASSIGNED BY: PROFESSOR

VALUES AND MEANINGS: NAME OF PUBLISHER TO WHOM MANUSCRIPT HAS BEEN SUBMITTED FOR PUBLISHING.

NOTES:

DATA FLOW: TEXTBOOK ORDER

DATA ELEMENT NAME: PUBLISHING

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= { TYPE + TITLE + TARGET + SUBMISSION-DATE + PUB-
LISH-DATE + STATUS + (REMARKS) }

NOTES:

FILE: FACULTY

DATA FLOW: FACULTY AVAILABILITY REPORT, FACULTY
ACTIVITY REPORT

SUBSET OF DATA ELEMENT(S): ACADEMIC-HISTORY

SECONDARY KEY

DATA ELEMENT NAME: PURCHASE-ORDER-NO

ALIASES: PURCHASE-ORDER-NUMBER

ASSIGNED BY: SUPPLY DEPARTMENT

VALUES AND MEANINGS:

= UIC + FY + __ + SERIAL-NO

UIC = UNIT IDENTIFICATION CODE, I.E., 68271

FY = 8X, I.E., 84

__ = ARBITRARY CHARACTER

SERIAL NUMBER = 4 NUMERIC CHARACTERS, I.E., 3378

NOTES:

FILE: EQUIPMENT

DATA FLOW: LABOR SAVINGS DEVICE REPORT, PURCHASE ORDER FORM, DD FORM 1155

SUBSET OF DATA ELEMENT(S): SUPPLY-DEPT-INFO

DATA ELEMENT NAME: PURCHASED-PRINTING

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET ELEMENT FOR PRINTING CONTRACTED FOR EXTERNAL TO NPS.

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-ELEMENT

DATA ELEMENT NAME: QTR

ALIASES: QUARTER

ASSIGNED BY:

VALUES AND MEANINGS: DESIGNATION OF ACADEMIC/FISCAL QUARTER

QTR = [1ST QUARTER, 2ND QUARTER, 3RD QUARTER, 4TH QUARTER]

NOTES:

DATA FLOW: OPTAR GRANT

DATA ELEMENT NAME: QUANTITY

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: NUMERIC, INDICATING THE NUMBER OF ITEMS OF SUPPLY OR PIECES OF EQUIPMENT.

PLANT ACCOUNT REPORT = NUMBER OF PIECES OF EQUIPMENT PER LOCATION

NOTES:

DATA FLOW: PLANT ACCOUNT REPORT, REQUISITIONS, READY SUPPLY STORE REQUEST

DATA ELEMENT NAME: QUARTER-OFFERED

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: ACADEMIC QUARTER IN WHICH A SPECIFIC COURSE IS SCHEDULED TO BE OFFERED.

NUMBER	QUARTER
1	FALL
2	WINTER
3	SPRING
4	SUMMER

NOTES:

FILE: COURSE

DATA FLOW: COURSE PREFERENCE

SUBSET OF DATA ELEMENT(S): COURSE-PREFERENCE

DATA ELEMENT NAME: QUARTERLY-ASSIGNMENT

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: LONG RANGE SCHEDULING BY DEPARTMENT CHAIRMAN FOR INDIVIDUAL INSTRUCTORS

QUARTERLY-ASSIGNMENT = FALL-QTR + WINTER-QTR + SPRING-QTR + SUMMER-QTR

VALUES	MEANING
TEACH	S.D.
RESEARCH	RESEARCH FOUNDATION APPROVED TASK
IP	INTERSESSIONAL PERIOD (UNFUNDED)

I.E.,	1	2	3	4
	TEACH	RESEARCH	TEACH	IP

NOTES:

FILE: FACULTY EMPLOYMENT SCHEDULE

DATA FLOW: FACULTY EMPLOYMENT WORKSHEET

DATA ELEMENT NAME: RANK

ALIASES:

ASSIGNED BY: PROVOST/NAVAL MILITARY PERSONNEL COMMAND

VALUES AND MEANINGS: ACADEMIC OR MILITARY RANK OF STAFF/
FACULTY, I.E.,

ASSOCIATE PROFESSOR

COMMANDER

NOTES:

FILE: FACULTY

DATA FLOW: CPO LISTING, MILPERS DATA

SUBSET OF DATA ELEMENT(S): MILPERS-INFO

DATA ELEMENT NAME: REGULAR-HOURS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: THE NUMBER OF HOURS AN EMPLOYEE WORKS AT THE PERSON'S REGULAR HOURLY RATE, AS DISTINGUISHED FROM THE OVERTIME RATE OF 1.5 X REGULAR HOURLY RATE.

NOTES:

DATA FLOW: TIME CARDS, JOB ORDER CARDS

SUBSET OF DATA ELEMENT(S): ACTUAL-HOURS

DATA ELEMENT NAME: REMARKS

ALIASES:

ASSIGNED BY: DEPARTMENT/INSTRUCTOR

VALUES AND MEANINGS: FURTHER EXPLANATION OF EARLIER INFORMATION

NOTES:

FILE: BILLET, COURSE, EQUIPMENT, PERSONNEL, SPACE, SUPPLIES

DATA FLOW: FACULTY AVAILABILITY REPORT, SPACE UTILIZATION REPORT, PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): RESEARCH, PUBLISHING, PROFESSIONAL, BIOGRAPHIC, AVAILABLE-SPACE-DATA

DATA ELEMENT NAME: REQUEST-FOR

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: DESCRIPTION OF LEVEL OF EFFORT DESIRED BY THE DEPARTMENT FROM THE PUBLIC WORKS DEPARTMENT.

REQUEST-FOR = [COST-ESTIMATE | PERFORMANCE-OF-WORK]

NOTES:

DATA FLOW: WORK REQUEST

DATA ELEMENT NAME: REQUIRED/RECOMMENDED

ALIASES:

ASSIGNED BY: DEPARTMENT/INSTRUCTOR

VALUES AND MEANINGS:

VALUE	MEANING
REQUIRED	TEXTBOOK MUST BE USED BY ALL STUDENTS
RECOMMENDED	TEXT NOT REQUIRED, BUT USE WOULD BROADEN STUDENTS' EDUCATION

DATA FLOW: TEXTBOOK ORDER

DATA ELEMENT NAME: RES

ALIASES: RESIDENT

ASSIGNED BY: RESOURCE PLANNING BOARD

VALUES AND MEANINGS:

RES = DEPARTMENT OCCUPYING A PARTICULAR LOCATION

= DEPARTMENT CODE, I.E., 54

NOTES:

DATA FLOW: SPACE UTILIZATION REPORT

DATA ELEMENT NAME: RESEARCH

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

RESEARCH = { PROPOSAL-DATE + EXPIRES + RESEARCH-AREA + TITLE + TOTAL-FUNDS + COSTC + { SECONDARY-INVESTIGATORS } + REMARKS } + {RESEARCH-AREA} + RESEARCH-QTR

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): ACADEMIC-HISTORY

DATA ELEMENT NAME: RESEARCH-ACCOUNT

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: NAME OF PRINCIPLE INVESTIGATOR WITH AN INDICATION OF THE NUMBER OF OTHER RESEARCH ACCOUNTS HE MAY HAVE HAD ACTIVE AT ONE TIME, I.E.,

ELSTER4.

NOTES: THE 4 INDICATES THAT AT THE TIME OF ASSIGNMENT, PROFESSOR ELSTER HAD THREE PREVIOUS RESEARCH ACCOUNTS IN THE FINANCIAL FILES.

DATA FLOW: STATUS OF FUNDS REPORT

SUBSET OF DATA ELEMENT(S): ITEM-DESCRIPTION

DATA ELEMENT NAME: RESEARCH-AREA

ALIASES:

ASSIGNED BY: PROFESSOR/DEPARTMENT

VALUES AND MEANINGS: MAJOR FIELD OF INTEREST OF THE PRINCIPLE INVESTIGATOR, I.E.,

MANPOWER,

LOGISTICS.

NOTES:

FILE: FACULTY, RESEARCH PROPOSAL

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): RESEARCH

DATA ELEMENT NAME: RESEARCH-QTR

ALIASES: RESEARCH-QUARTER

ASSIGNED BY: DEPARTMENT/PROFESSOR

VALUES AND MEANINGS: THE ACADEMIC QUARTER(S) THAT THE PROFESSOR(S) DESIRE TO BE ASSIGNED TO RESEARCH TASK, AND/OR THE QUARTER OF ACTUAL ASSIGNMENT BY THE DEPARTMENT, SAME COMPOSITION AS AY-QTR: YYQ, I.E., 841.

NOTES:

DATA FLOW: PERSONAL PREFERENCE REPORT

SUBSET OF DATA ELEMENT(S): RESEARCH

DATA ELEMENT NAME: ROOM

ALIASES:

ASSIGNED BY: DEAN OF ACADEMIC ADMINISTRATION

VALUES AND MEANINGS:

ROOM = BUILDING-CODE + ROOM-NUMBER

BUILDING-CODE	BUILDING
I	INGERSOLL HALL
R	ROOT HALL
SP	SPANAGEL HALL

NOTES:

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: ROTATION-DATE

ALIASES:

ASSIGNED BY: NAVAL MILITARY PERSONNEL COMMAND

VALUES AND MEANINGS: CALENDAR MONTH/YEAR THAT A MILITARY INSTRUCTOR CAN EXPECT TO LEAVE NPS FOR ANOTHER ASSIGNMENT.

NOTES:

DATA FLOW: MILPERS DATA

SUBSET OF DATA ELEMENT(S): MILPERS-INFO

DATA ELEMENT NAME: SALARY

ALIASES:

ASSIGNED BY: DEPARTMENT/CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS: NUMERICS, USUALLY LESS THAN 6 FIGURES.

NOTES:

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): NPS-PROMOTION-HISTORY

DATA ELEMENT NAME: SALARY-STEP

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: EACH GRADE-LEVEL HAS 10 INCREMENTS, WHICH ARE CALLED STEPS. THEY ARE NUMBERED FROM 1 THROUGH 10.

NOTES:

DATA FLOW: CPO LISTING, SF-50, FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: SECONDARY-INVESTIGATORS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: OTHER PROFESSORS AUTHORIZED BY FUNDING SPONSOR TO PARTICIPATE IN RESEARCH: LISTED BY NAME OR EMPLOYEE-NUMBER.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): RESEARCH

DATA ELEMENT NAME: SECTION

ALIASES: ACADEMIC-SECTION

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING

VALUES AND MEANINGS:

SECTION = CURRICULUM-CODE + YQ + SUBSECTION

YQ = YEAR AND QUARTER OF ENROLLMENT AT NPS

Y = LAST DIGIT OF ACADEMIC YEAR

Q = AY-QTR

I.E., 41

SUBSECTION = INDICATING ONE OF (POSSIBLE) MANY SUBSECTIONS WITHIN THAT PARTICULAR CURRICULUM CODE, I.E., MP3405 IS THE ACADEMIC (SCHEDULING) SECTION, WHICH IS THE 5TH SUBSET OF THE GROUP OF MANPOWER THAT WERE FIRST ENROLLED IN THE 4TH QUARTER OF ACADEMIC YEAR 1983.

NOTES:

THE NUMBER OF STUDENTS PER SECTION WILL VARY.

DATA FLOW: QUARTERLY COURSE LOAD

DATA ELEMENT NAME: SEGMENT

ALIASES:

ASSIGNED BY: COMPTROLLER/DEPARTMENT

VALUES AND MEANINGS:

FINANCIAL: 4 NUMERICS TO INDICATE MORE SPECIFICALLY A SUBSET OF A FINANCIAL ALLOTMENT.

ACADEMIC: A SPECIFIC COURSE TAUGHT IN A QUARTER MAY HAVE FROM 1 TO "N" SEGMENTS WITH 30 STUDENTS BEING THE TARGET UPPER LIMIT FOR EACH SEGMENT. A SPECIFIC INSTRUCTOR COULD BE ASSIGNED TO TEACH ONE OR ALL SEGMENTS.

NOTES:

FILE: RESEARCH, SUPPORT-PERSONNEL-WORK-SCHEDULE

DATA FLOW: OPTAR GRANT, JOB ORDER CHARGES

DATA ELEMENT NAME: SELF-IMPROVEMENT-EFFORTS

ALIASES:

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: NARRATIVE BY PROFESSOR DESCRIBING PERSONAL SELF-IMPROVEMENT EFFORTS.

NOTES:

FILE: FACULTY

SUBSET OF DATA ELEMENT(S): INSTRUCTIONAL-ACTIVITIES

DATA ELEMENT NAME: SERVICE-TO-NPS

ALIASES: PROFESSIONAL

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: EFFORTS BY FACULTY THAT WERE OF VALUE TO NPS IN ADDITION TO INTERNAL ACADEMIC ASSIGNMENTS.

NOTES:

DATA FLOW: FACULTY ACTIVITY REPORT

DATA ELEMENT NAME: SOF

ALIASES: STUDENT-OPINION-FORM

ASSIGNED BY:

VALUES AND MEANINGS:

SOF = { CURRICULUM } + Q1{ MEAN } Q11 + MEAN(Q1-Q11) +
MEAN(Q12) + MEAN(Q13)

NOTES:

DATA FLOW: SOF

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY

DATA ELEMENT NAME: SOURCE-OF-SUPPLY

ALIASES:

ASSIGNED BY: SUPPLY OFFICER

VALUES AND MEANINGS: DESTINATION OF PROCUREMENT REQUEST,

I.E.,

4212	READY SUPPLY STORE
4222	PURCHASING (VENDOR TO BE DETERMINED)
MONTEREY OFFICE SUPPLIES	DEPARTMENT'S PREFERRED SOURCE- SHOULD BE INDICATED ON REQUISITION IN THE REMARKS AREA.

NOTES:

SHOULD BE USED TO INDICATE LEAD TIME FOR REQUISITION IN ORDER TO PRECLUDE RUNNING OUT OF STOCK.

FILE: SUPPLIES

DATA ELEMENT NAME: SPACE-DATA

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

= LOCATION + AREA + EQUIPMENT-DATA + TELEPHONE-NO

NOTES:

DATA FLOW: AVAILABLE SPACE DATA

DATA ELEMENT NAME: SPONSOR

ALIASES:

ASSIGNED BY: DEPARTMENT/INSTRUCTOR

VALUES AND MEANINGS: ORGANIZATION TO WHOM RESEARCH PROPOSAL OR ARTICLE/TEXT IS SUBMITTED, I.E., DOD, USN, FAA, MIT, OR ONR.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): PROFESSIONAL

DATA ELEMENT NAME: SSN

ALIASES: SOCIAL-SECURITY-NUMBER

ASSIGNED BY: SOCIAL SECURITY ADMINISTRATION

VALUES AND MEANINGS: 9 NUMERICS, MAY/MAY NOT BE SEPARATED BY DASHES IN FILE, I.E., NNN-NN-NNNN.

NOTES:

DATA FLOW: CPO LISTING

SUBSET OF DATA ELEMENT(S): CPO-DATA

DATA ELEMENT NAME: STATUS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: DESCRIPTION OF CURRENT STATE OF AFFAIRS OF A PROJECT.

NOTES:

FILE: OPTAR

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): PUBLISHING

DATA ELEMENT NAME: STOCK-NO-AND-DESCRIPTION

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= NSN + DESCRIPTION

NOTES:

DATA ELEMENT NAME: STREET-NAME

ALIASES:

ASSIGNED BY: EMPLOYEE

VALUES AND MEANINGS: ALPHA/NUMERIC NAME OF STREET, MAY BE LIMITED TO ARBITRARY NUMBER OF CHARACTERS, IF DESIRED, I.E., 15.

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): ADDRESS

DATA ELEMENT NAME: STREET-NUMBER

ALIASES:

ASSIGNED BY: EMPLOYEE

VALUES AND MEANINGS: NUMBERIC DESIGNATION OF RESIDENCE ON A SPECIFIC STREET, USUALLY LIMITED TO 6 DIGITS, OR LESS.

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): ADDRESS

DATA ELEMENT NAME: STUB-NUMBER

ALIASES: DOCUMENT-NUMBER

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

STUB NUMBER WILL CONSIST OF EITHER:

A) JULIAN DATE AND SERIAL NUMBER OF REQUISITION,

I.E., 3109-5591;

B) TANGO NUMBER, IN THE CASE OF TRAVEL ORDERS: OR

C) CODE RELATING TO A TRANSFER OF RESEARCH ACCOUNT

FUNDS TO COVER INDIRECT COSTS.

NOTES:

TECHNICALLY, DOCUMENT-NUMBER MUST INCLUDE THE UIC OF THE REQUISITIONER, BUT USERS OFTEN SPEAK OF STUB-NUMBER AND DOCUMENT-NUMBER AS THE SAME.

FILE: OPTAR, RESEARCH

SUBSET OF DATA ELEMENT(S): DOCUMENT-NUMBER

DATA ELEMENT NAME: STUDENT-NAME

ALIASES:

ASSIGNED BY: STUDENT

VALUES AND MEANINGS:

S.D.

NOTES:

DATA FLOW: QUARTERLY COURSE LOAD

SUBSET OF DATA ELEMENT(S): THESIS

DATA ELEMENT NAME: SUBMISSION-DATE

ALIASES:

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: CALENDAR DATE THAT PROPOSAL/ARTICLE WAS SUBMITTED: MAY BE ALL NUMERIC OR ALPHA-NUMERIC, I.E., 10 OCT 1983, OR 10/10/83.

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): PUBLISHING

DATA ELEMENT NAME: SUBSCRIPTION/BOOKS

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET ITEM, EXPRESSED IN DOLLARS,
FOR MAGAZINE SUBSCRIPTIONS AND BOOKS.

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): ITEMS

DATA ELEMENT NAME: SUBSIDIARY-BALANCE

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: CURRENT BALANCE OF DEPARTMENT/RESEARCH ACCOUNTS AFTER THE LAST TRANSACTION LISTED.

NOTES:

ACCUMULATED TOTAL OF ALL INDIRECT FUNDS (10% FUNDS) ARE NOT SPENDABLE AS A LUMP SUM, BUT MUST BE UTILIZED AS A SEPARATE ALLOTMENT FOR EACH ACCOUNT.

FILE: RESEARCH

DATA FLOW: STATUS OF FUNDS

DATA ELEMENT NAME: SUBSIDIARY-OBLIGATION

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: AN OBLIGATION OF A RESEARCH ACCOUNT, EITHER THE MAIN ACCOUNT OF THE PRINCIPLE INVESTIGATOR, OR THE INDIRECT FUNDS OF THE DEPARTMENT. IT DECREMENTS THE SUBSIDIARY-BALANCE.

NOTES:

FILE: RESEARCH

DATA FLOW: STATUS OF FUNDS

DATA ELEMENT NAME: SUM-TOTAL-OF-OBLIGATIONS

ALIASES:

ASSIGNED BY: COMPTROLLER/DEAN OF RESEARCH

VALUES AND MEANINGS: VALUE OF OBLIGATIONS OF ALL INDIRECT FUNDS ACCOUNTS, LISTED BY ACCOUNT, FOR THE YEAR TO DATE.

NOTES:

FILE: OPTAR

DATA FLOW: STATUS OF FUNDS

DATA ELEMENT NAME: SUMMARY

ALIASES:

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING/DEPARTMENT

VALUES AND MEANINGS:

SUMMARY = NO-DAYS + FUNDING-SOURCE , I.E.,

131 (O&MN)

44 (XXX)

NOTES:

FILE: FACULTY EMPLOYMENT SCHEDULE

DATA FLOW: FACULTY EMPLOYMENT SCHEDULE

SECONDARY_KEY

DATA ELEMENT NAME: SUMMARY-OF-CATEGORY-CHARGES

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: FINANCIAL CHARGES ARE CATEGORIZED BY TYPE OF CHARGE.

COLUMN

SPONSORED RESEARCH ACCOUNT

1 - LABOR EXPENDITURE

2 - ALL EXPENDITURES, LESS LABOR

5 - AMOUNT OF FUNDS RECEIVED

FOUNDATION ACCOUNTS

3 - ALL EXPENDITURES

4 - AMOUNT OF FUNDS PROVIDED INVESTIGATOR FROM THE MAIN FOUNDATION ACCOUNT

NOTES:

FILE: OPTAR, RESEARCH

DATA FLOW: STATUS OF FUNDS REPORT

DATA ELEMENT NAME: SUMMARY-OF-REIMB-MAN-QTRS

ALIASES: SUMMARY-OF-REIMBURSABLE-MAN-QUARTERS

ASSIGNED BY: DIRECTOR OF ACADEMIC PLANNING

VALUES AND MEANINGS: NUMERIC = SUM OF NON-INTERSESSIONAL PERIOD QUARTERS, THAT IS THE NUMBER OF FUNDED (O&MN AND RESEARCH FUNDS) QUARTERS THAT THE DEPARTMENT CAN WORK WITH. THE DIFFERENCE BETWEEN THAT AND THE TOTAL FISCAL YEAR IS THAT AMOUNT THAT STILL NEEDS TO BE PROCURED FROM SOME FUNDING SOURCE IF ALL THE FACULTY IS TO BE PAID.

NOTES:

FILE: FACULTY EMPLOYMENT SCHEDULE

DATA FLOW: FACULTY EMPLOYMENT WORKSHEET

DATA ELEMENT NAME: SUPPLEMENTARY-ADDRESS

ALIASES: JOB-ORDER-NUMBER

ASSIGNED BY: COMPTROLLER/DEPARTMENT

VALUES AND MEANINGS: COMPTROLLER ASSIGNS A RANGE OF JOB ORDER NUMBERS, 5 ALPHA CHARACTERS, TO BE USED IN CONJUNCTION WITH CHARGING ACCOUNTS; THE DEPARTMENT IS RESPONSIBLE FOR USING THE CORRECT ONE FOR EACH ACCOUNT. THE JOB ORDER NUMBER FOR EACH ACCOUNT IS PLACED IN THE SUPPLEMENTARY_ADDRESS FIELD OF EACH REQUISITION UPON SUBMITTAL.

NOTES:

DATA FLOW: REQUISITION

SECONDARY_KEY

DATA ELEMENT NAME: SUPPLIES ($<$200)

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: BUDGET ELEMENT FOR CONSUMABLE
SUPPLIES, EXPRESSED IN DOLLARS.

NOTES:

DATA FLOW: BUDGET REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-
ELEMENT, ITEMS.

DATA ELEMENT NAME: SUPPLY-DEPT-INFO

ALIASES: SUPPLY-DEPARTMENT-INFORMATION

ASSIGNED BY: SUPPLY DEPARTMENT

VALUES AND MEANINGS:

= PURCHASE-ORDER-NO + YEAR-ACQUIRED

NOTES:

DATA FLOW: LABOR SAVINGS DEVICE REPORT

DATA ELEMENT NAME: TANGO-NR

ALIASES: TANGO-NUMBER

ASSIGNED BY: COMPTROLLER/DEPARTMENT

VALUES AND MEANINGS: COMPTROLLER ASSIGNS THE RANGE OF TANGO NUMBERS, AND THE DEPARTMENT IS RESPONSIBLE FOR USING THE CORRECT NUMBER ON THE TRAVEL ORDERS.

NOTES:

SEE NPS NOTICE 4235 (SERIES)

DATA FLOW: TRAVEL ORDERS

DATA ELEMENT NAME: TARGET

ALIASES:

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: THE INSTITUTION TO WHICH AN ARTICLE/ PAPER/TEXT IS SUBMITTED FOR PUBLISHING.

NOTES:

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): PUBLISHING

DATA ELEMENT NAME: TEACHING

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

TEACHING = COURSE-HISTORY + COURSE-PREFERENCE

NOTES:

SUBSET OF DATA ELEMENT(S): ACADEMIC-HISTORY

DATA ELEMENT NAME: TEACHING-LOAD

ALIASES:

ASSIGNED BY: DEPARTMENT/INSTRUCTOR

VALUES AND MEANINGS: DEPARTMENT CHAIRMAN ASSIGNS THE QUARTERLY TEACHING LOAD, EXPRESSED IN HOURS CLASSROOM CONTACT HOURS AND LABORATORY HOURS, BUT THE DATA IS GIVEN BY THE INSTRUCTOR TO THE STUDENTS FOR THEIR ENTRY ON THE SOF FORMS.

NOTES:

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY

DATA ELEMENT NAME: TELEPHONE-CHARGES

ALIASES:

ASSIGNED BY: PACIFIC TELEPHONE

VALUES AND MEANINGS: EXPRESSED IN DOLLARS EACH MONTH FOR EACH SEPARATE TELEPHONE LINE.

TELEPHONE-CHARGES = TELEPHONE-MONTHLY-CHARGES

NOTES:

FILE: SPACE

DATA ELEMENT NAME: TELEPHONE-NUMBER

ALIASES:

ASSIGNED BY: PACIFIC TELEPHONE COMPANY

VALUES AND MEANINGS: NUMERICS, 10 DIGITS

= AREA-CODE + NNN-NNNN

AREA-CODE = 408

NOTES:

FILE: SPACE

DATA FLOW: PERSONAL-BIOGRAPHY (FOR RESIDENCE NO)

SUBSET OF DATA ELEMENT(S): SPACE-DATA, BIO-DATA

DATA ELEMENT NAME: TENURE

ALIASES:

ASSIGNED BY: PROVOST

VALUES AND MEANINGS: OFFICIAL STATUS GIVEN TO A FACULTY MEMBER THAT IS, IN EFFECT, A LONG TERM CONTRACT FOR EMPLOYMENT.

NOTES:

FILE: FACULTY

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

DATA ELEMENT NAME: TEXTBOOK-TITLE

ALIASES:

ASSIGNED BY: AUTHOR

VALUES AND MEANINGS: S.D.

NOTES:

DATA FLOW: TEXTBOOK ORDER

DATA ELEMENT NAME: TEXTBOOK-USED

ALIASES:

ASSIGNED BY: INSTRUCTOR

VALUES AND MEANINGS: TITLE OF TEXTBOOK USED DURING ACADEMIC QUARTER.

NOTES:

DATA FLOW: COURSE JOURNAL

SUBSET OF DATA ELEMENT(S): COURSE-HISTORY

DATA ELEMENT NAME: THESIS

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

THESIS = { AY-QTR + CURRICULUM + STUDENT-NAME +
TITLE }

NOTES:

FILE: FACULTY

SUBSET OF DATA ELEMENT(S): ACADEMIC-HISTORY,
INSTRUCTIONAL-ACTIVITIES.

SECONDARY KEY

DATA ELEMENT NAME: TITLE

ALIASES:

ASSIGNED BY: PROFESSOR

VALUES AND MEANINGS: NAME OF ARTICLE/TEXT

NOTES:

FILE: RESEARCH-PROPOSAL

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): PUBLISHING, RESEARCH, THESIS

DATA ELEMENT NAME: TOTAL

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

= QUANTITY X U/P

NOTES:

DATA FLOW: BUDGET REQUEST, READY SUPPLY STORE REQUEST

SUBSET OF DATA ELEMENT(S): DESCRIPTION/BUDGET-REQUEST

DATA ELEMENT NAME: TOTAL-FUNDS

ALIASES:

ASSIGNED BY: DEPARTMENT/PRINCIPLE-INVESTIGATOR

VALUES AND MEANINGS: SUM OF ALL FUNDS CREDITED TO RESEARCH TASKINGS RECEIVED BY NPS.

NOTES:

FILE: RESEARCH PROPOSAL

DATA FLOW: FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): RESEARCH

DATA ELEMENT NAME: TOTAL-REMAINING

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: DOLLAR VALUE OF FUNDS AVAILABLE IN CURRENT ACCOUNT.

NOTES:

DATA FLOW: FUNDS DEFICIENCY REPORT

DATA ELEMENT NAME: TYPE

ALIASES:

ASSIGNED BY: DEPARTMENT/PROFESSOR

VALUES AND MEANINGS:

OVERTIME-REQUEST

TYPE = [OVERTIME | COMPENSATORY-TIME]

FACULTY-AVAILABILITY-REPORT

TYPE = [ARTICLE | TECHNICAL-REPORT | PRESENTATION | BOOK | OTHER]

NOTES:

DATA FLOW: OVERTIME REQUEST, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): PUBLISHING

DATA ELEMENT NAME: TYPE-APPOINTMENT

ALIASES:

ASSIGNED BY: CIVILIAN PERSONNEL OFFICE

VALUES AND MEANINGS:

VALUE	MEANINGS
10	CAREER APPOINTMENT
11	CAREER-CONDITIONAL
30	TEMPORARY NTE
70	EXCEPTED APPT W/O LIMITATION
71	EXCEPTED APPT NTE _____
72	VETERAN'S READJUSTMENT APPT

NOTES:

DATA FLOW: CPO LISTING, FACULTY AVAILABILITY REPORT

SUBSET OF DATA ELEMENT(S): CPO-DATA, EMPLOYEE-DATA

DATA ELEMENT NAME: U/P

ALIASES: UNIT/PRICE

ASSIGNED BY: DEFENSE LOGISTICS SERVICE CENTER

VALUES AND MEANINGS: STANDARD PRICE CHARGED TO THE CUSTOMER FOR REQUISITIONING ITEMS OF SUPPLY.

NOTES:

FILE: EQUIPMENT, SUPPLIES

DATA FLOW: REQUISITIONS

DATA ELEMENT NAME: UPDATE-INFO

ALIASES:

ASSIGNED BY: COMPTROLLER

VALUES AND MEANINGS: COLUMN WILL CONTAIN EITHER:

1) DATE OF SUBSEQUENT UPDATE,

2) ACCUMULATED TOTAL OF TRANSACTION AFTER ALL UPDATES,

3) MISCELLANEOUS CODE DESCRIBING UPDATE, I.E., LABOR.

NOTES:

FILE: OPTAR, RESEARCH

DATA FLOW: STATUS OF FUNDS REPORT

DATA ELEMENT NAME: USE

ALIASES: STANDARD-ROOM-USE-CATEGORIES

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS:

VALUE	MEANING
110	CLASSROOM
310	OFFICE
535	AUDIOVISUAL, RADIO, TV SERVICE
650	LOUNGE

NOTES:

FILE: SPACE, SUPPLIES

DATA FLOW: SPACE UTILIZATION REPORT

DATA ELEMENT NAME: WEEKDAY

ALIASES:

ASSIGNED BY: CONVENTION

VALUES AND MEANINGS:

$$= \left[\begin{array}{l} \text{MONDAY} \\ \text{TUESDAY} \\ \text{WEDNESDAY} \\ \text{THURSDAY} \\ \text{FRIDAY} \end{array}\right] = \{\ \text{PERIOD}\ \} + \{\ \text{ROOM}\ \} + (\text{FINAL-EXAM})$$

NOTES:

DATA FLOW: MASTER SCHEDULE

DATA ELEMENT NAME: WORK-HISTORY

ALIASES:

ASSIGNED BY:

VALUES AND MEANINGS:

WORK-HISTORY = { [INSTITUTION / FIRM] + POSITION-TITLE + INCLUSIVE-DATES }

NOTES:

FILE: PERSONNEL

DATA FLOW: PERSONAL BIOGRAPHY

DATA ELEMENT NAME: WORK-ORDER-DATE

ALIASES:

ASSIGNED BY: DEPARTMENT

VALUES AND MEANINGS: CALENDAR DATE THAT WORK REQUEST WAS SUBMITTED TO THE PUBLIC WORKS DEPARTMENT: USED TO TRIGGER FOLLOW-UP REQUESTS.

NOTES:

FILE: SPACE

DATA FLOW: WORK REQUEST

DATA ELEMENT NAME: WORK-ORDER-NO

ALIASES:

ASSIGNED BY: PUBLIC WORKS

VALUES AND MEANINGS: ALPHA-NUMERIC DESIGNATION IN ORDER TO DESIGNATE THE DEPARTMENT'S WORK ORDER, I.E., 846-83

NOTES:

FILE: LOCATION

DATA FLOW: WORK REQUEST

DATA ELEMENT NAME: WORK-ORDER-STATUS

ALIASES:

ASSIGNED BY: PUBLIC WORKS DEPARTMENT

VALUES AND MEANINGS: NARRATIVE TEXT (ALPHA-NUMERIC) TO INDICATE THE CURRENT STATE OF THE WORK REQUESTED.

I.E.,

STATUS	MEANING
COMPLETE	
OPEN	BEFORE STATUS RECEIVED
831230	ESTIMATED DATE OF COMPLETION (EDC)

NOTES:

FILE: SPACE

DATA FLOW: VERBAL UPDATES TO WORK REQUEST

DATA ELEMENT NAME: YEAR-ACQUIRED

ALIASES:

ASSIGNED BY: SUPPLY DEPARTMENT

VALUES AND MEANINGS: CALENDAR YEAR THAT A PIECE OF EQUIPMENT WAS ACQUIRED THROUGH PROCUREMENT BY THE SUPPLY DEPARTMENT FOR USE BY THE ADMINISTRATIVE SCIENCES DEPARTMENT.

NOTES:

FILE: EQUIPMENT

DATA FLOW: LABOR SAVINGS DEVICE REPORT

SUBSET OF DATA ELEMENT(S): SUPPLY-DEPT-INFO

DATA ELEMENT NAME: YEAR-AWARDED

ALIASES:

ASSIGNED BY: UNIVERSITY

VALUES AND MEANINGS: CALENDAR YEAR (OR LAST TWO DIGITS)
THAT DEGREE WAS AWARDED.

NOTES:

SUBSET OF DATA ELEMENT(S): DEGREE-HISTORY

DATA ELEMENT NAME: ZIP

ALIASES:

ASSIGNED BY: POSTAL SERVICE

VALUES AND MEANINGS: 5 (OR 9) DIGITS TO INDICATE THE

POSTAL DELIVERY AREA, I.E., 93943 OR 93943-4220

NOTES:

DATA FLOW: PERSONAL BIOGRAPHY

SUBSET OF DATA ELEMENT(S): ADDRESS

ADMINISTRATIVE SCIENCE FILES

No.	FILE/DATABASE NAME
1	BILLET
2	COURSE
3	EQUIPMENT
4	FACULTY
5	FACULTY-EMPLOYMENT-SCHEDULE
6	OPTAR
7	PERSONNEL
8	RESEARCH
9	RESEARCH-PROPOSAL
10	SPACE
11	SUPPLIES
12	SUPPORT-PERSONNEL-WORK-SCHEDULE

FILE/DATABASE NAME: BILLET

ALIASES:

COMPOSITION:

{ BILLET-NO + PD/JD-NO + POSITION-TITLE +

EMPLOYEE-NUMBER + (REMARKS) }

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEY

There are no billet numbers assigned to faculty. Psuedo billet numbers, as well as pd/jd numbers should be assigned to all faculty positions. The numbering system could have a significant structure to indicate academic discipline or curriculum specialty.

FILE/DATABASE NAME: FACULTY-EMPLOYMENT-SCHEDULE

ALIASES:

COMPOSITION:

MO + 1{ EMPLOYEE-NUMBER + QUARTERLY-ASSIGNMENT +

SUMMARY-OF-REIMB-MAN-QTRS + { SUMMARY } +

{ EMPLOYMENT-SCHEDULE }

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS are within QUARTERLY-ASSIGNMENT

and SUMMARY.

FILE/DATABASE NAME: COURSE

ALIASES: CATALOG

COMPOSITION:

COURSE-NUMBER + COURSE-NAME + CREDIT-HOURS +

QUARTER-OFFERED + COURSE-CO-ORDINATOR +

{ PROF + AY-QTR } + (REMARKS)

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS

FILE/DATABASE NAME: EQUIPMENT

ALIASES:

COMPOSITION:

PLANT-ACCOUNT-NUMBER + NOMENCLATURE + MAKE/MODEL + SERIAL-NUMBER + USN + U/P + PURCHASE-ORDER-NO + YEAR-ACQUIRED + LOCATION + (REMARKS)

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS

Plant account number field may be used to insert an A/S department numbering system, i.e., D1, C1, for non-accountable furniture, such as desks and chairs. The plant account report calls for quantity of equipment per location, but this would be superfluous in this file since there would be only one record per piece of equipment.

FILE/DATABASE NAME: FACULTY

ALIASES:

COMPOSITION:

1{ EMPLOYEE-NUMBER + ACADEMIC-DISCIPLINE + RANK +
TENURE + FACULTY-INITIAL-RANK + FACULTY=APPOINT-
MENTS-CURRENT-RANK + FACULTY-YEARS-OF-EXPERIENCE +
{ COURSE-HISTORY } + { COURSE-REQUESTED } +
{ THESIS } + { PUBLISHING } + { PROFESSIONAL } +
{ PREVIOUS-ACADEMIC-ASSIGNMENTS } + { COURSE/LABOR-
ATORY-DEVELOPMENT } + { CONTINUING-EDUCATION-ACTIVITY}
+ { SELF-IMPROVEMENT-EFFORTS } + PLANS-FOR-198X +
{ RESEARCH-AREA } + { COSTC }

ORGANIZATION: DIRECT ACCESS

NOTES: NF = number of faculty.

PRIMARY KEY

SECONDARY KEYS are also within COURSE-HISTORY, THESIS, PUBLISHING, PROFESSIONAL, AND PREVIOUS-ACADEMIC-ASSIGNMENTS.

FILE/DATABASE NAME: OPTAR

ALIASES:

COMPOSITION:

ACCOUNT + DATE-OF-LAST-UPDATE + (SERIAL-NOS) +

1{ITEM + {DATE + CATEGORY-CODE + ITEM-DESCRIP-

TION + UPDATE-INFO + STUB-NUMBER + ACCOUNT-BALANCE

+ SUM-TOTAL-OF-OBLIGATIONS } + { SUMMARY-OF-CATE-

GORY-OF-CHARGES} + STATUS

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS

Optar log lists obligations within item category. Status of funds report does not subdivide by item not category of charges; it lists in date of transaction order. Redesign should consider expanding the expense element codes (NPS Notice 4235) and the category of charges codes to correlate better with the budget category codes for easier development of the budget request.

FILE/DATABASE NAME: PERSONNEL

ALIASES:

COMPOSITION:

1 { CPO-DATA + (BIO-DATA) + {DEGREE-HISTORY} +
{ WORK-HISTORY } + { NPS-PROMOTION-HISTORY } +
(COMMERCIAL-INTERESTS) + (REMARKS) + (MILPERS-
INFO) } N

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY is NAME within CPO-DATA.

N = number of employees, including civilian and military faculty.

FILE/DATABASE NAME: RESEARCH

ALIASES:

COMPOSITION:

1 {COSTC + SEGMENT + EXPIRES + {ACCOUNT + DATE-OF-LAST-UPDATE + (SERIAL-NUMBER) + { DATE +CATE-GORY-CODE + ITEM-DESCRIPTION + UPDATE-INFO + STUB-NUMBER + SUBSIDIARY-OBLIGATION + SUBSIDIARY-BALANCE + { SUMMARY-OF-CATEGORY-CHARGES } } + { ACCOUNT-BALANCE }

ORGANIZATION: DIRECT ACCESS

NOTES:

Each cost code would be subdivided, at least, twice into the main research account and the department's indirect funds (10% funds). The department's accounts should then be updated current balance.

PRIMARY KEY

SECONDARY KEYS

FILE/DATABASE NAME: RESEARCH-PROPOSAL

ALIASES:

COMPOSITION:

{ PRINCIPLE-INVESTIGATOR + { PROPOSAL-DATE + TITLE
RESEARCH-AREA + SPONSOR + { SECONDARY-INVESTIGATORS}
+ LABOR + (OFFICE-SPACE) + (LABORATORY-SPACE) +
(COMPUTER-RESOURCES-REQUIRED) + (LIBRARY-RESOURCES-
REQUIRED) + (OTHER-NPS-RESOURCES-REQR) + FUNDING-
SOURCE + TOTAL-FUNDS + (REMARKS) } }

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS

FUNDING-SOURCE = "XXX", until reimbursable cost code is assigned.

TOTAL-FUNDS = sum of all the estimates until funds are actually received from sponsor; at which time the exact amount is entered.

File/DATABASE NAME: SPACE

ALIASES: BUILDING

COMPOSITION:

{ LOCATION + { EMPLOYEE-NUMBER } + AREA + CAP +
USE + ABCDEFG + A/N + AVAIL + TELEPHONE-NUMBER +
{ TELEPHONE-CHARGES } + { { PLANT-ACCOUNT-NUMBER})
+ { WORK-ORDER-NO + WORK-ORDER-DATE + WORK-ORDER-
STATUS + (REMARKS) }

ORGANIZATION: DIRECT ACCESS

NOTES:

PRIMARY KEY

SECONDARY KEYS

FILE/DATABASE NAME: SUPPLIES

ALIASES:

COMPOSITION:

{ NSN + NOMENCLATURE + U/P + DEMAND + EOQ +

{ SOURCE-OF-SUPPLY } + PREVIOUS-DEMAND + (REMARKS)}

ORGANIZATION: DIRECT ACCESS

NOTES:

DEMAND field is incremented upon receipt of material. The demand data is used to complete new fiscal year budget request and then is transferred to the PREVIOUS-DEMAND field at the start of the new fiscal year. At that time, the DEMAND field would equal zero.

PRIMARY KEY

SECONDARY KEYS

FILE/DATABASE NAME: SUPPORT-PERSONNEL-WORK-SCHEDULE

ALIASES:

COMPOSITION:

{ EMPLOYEE-NUMBER + { DATES + DAYS + COSTC +

SEGNO + HPW } }

ORGANIZATION: DIRECT ACCESS

NOTE:

PRIMARY KEY

SECONDARY KEYS

D. PROCESS DESCRIPTIONS

No.	PROCESS DESCRIPTIONS
1	EMPLOY PERSONNEL
2	VERIFY/UPDATE PERSONNEL-FILE
3	UPDATE-PERSONNEL-FILE(PERSONAL-DATA)
4	CHANGE PERSONNEL STATUS
5	RETRIEVE RESOURCE DATA
6	ALLOCATE RESOURCES
7	DETERMINE RESOURCE REQUIREMENT
8	RETRIEVE PERFORMANCE DATA
9	INITIATE PERSONNEL SCHEDULE
10	REVISE-PERSONNEL-SCHEDULE
11	PREPARE TIME & JOB ORDER CARDS
12	PREPARE FACULTY CERTIFICATION REPORT
13	PREPARE JOB ORDER CHARGE REPORT
14	PREPARE OVERTIME REQUEST
15	RECEIVE FUNDS
16	OBLIGATE FUNDS
17	UPDATE OPTAR/RESEARCH ACCOUNTS
18	DETERMINE REVISED FUNDING METHOD
19	SUBMIT UNFUNDED REQUIREMENTS REQUEST
20	SUBMIT RESEARCH PROPOSAL
21	SUBMIT BUDGET REQUEST
22	ACQUIRE PROPERTY
23	MODIFY SPACE/EQUIPMENT
24	PRODUCE REPORTS
25	PRODUCE REPORTS, contd
26	DISPOSE OF PROPERTY

PROCESS NAME: EMPLOY PERSONNEL

PROCESS NUMBER: 1.1.1

PROCESS DESCRIPTION:

```
    FOR EACH new employee
        BUILD new PERSONNEL-FILE record
            IF civilian
                USE SF-50 for all available data
            IF military
                USE MILPERS-DATA for data input
```

PROCESS NAME: VERIFY/UPDATE PERSONNEL-FILE

PROCESS NUMBER: 1.1.2.1

PROCESS DESCRIPTION:

```
    UPON RECEIPT of CPO-LISTING
        ACCESS each PERSONNEL-FILE record
        FOR EACH new employee
            ADD data not already in file
        FOR ALL employees
            COMPARE data in CPO-LISTING with PERSONNEL-FILE
            IF data not equal
                VALIDATE, if inconsistent
                UPDATE PERSONNEL-FILE

    UPON RECEIPT of BILLET-LISTING
        ACCESS all BILLET-FILE records
            ADD/DELETE BILLET-NUMBERS, if necessary
        FOR EACH BILLET-NO with no EMPLOYEE-NO
            NOTIFY management, if necessary
        FOR EACH employee without a BILLET-NO
            ADD temporary BILLET-NO to BILLET-FILE
            NOTIFY management of excess personnel

    IN ANY CASE
        NOTIFY management that PERSONNEL-FILE updated

        SUBMIT REQUEST-FOR-PERSONNEL-INFORMATION
```

PROCESS NAME: UPDATE-PERSONNEL-FILE(PERSONAL-DATA)

PROCESS NUMBER: 1.1.2.2

PROCESS DESCRIPTION:

FOR EACH new employee

ACCESS each PERSONNEL-FILE record

RETREIVE PERSONAL-BIOGRAPHY-REPORT

LOAD data not already in file

FOR all faculty

UPON RECEIPT of each PERSONAL-PREFERENCE-REPORT

LOAD most recent data to FACULTY-FILE

IN ANY CASE

NOTIFY management PERSONNEL-AVAILABILITY-FOR-

ASSIGNMENT

PROCESS NAME: CHANGE PERSONNEL STATUS

PROCESS NUMBER: 1.1.2.3

PROCESS DESCRIPTION:

UPON RECEIPT of MANAGEMENT-ACTION

RETRIEVE applicable PERSONNEL-FILE record

SUBMIT REQUEST-FOR-PERSONNEL-ACTION to CPO

RECORD in REMARKS of PERSONNEL-FILE type and date of personnel action requested

---

PROCESS NAME: RETRIEVE RESOURCE DATA

PROCESS NUMBER: 1.2.1

PROCESS DESCRIPTION:

```
UPON RECEIPT of PERSONNEL-AVAILABILITY-FOR-ASSIGNMENT
    ACCESS PERSONNEL-FILE record
    ACCESS SPACE-FILE
        LIST all unassigned LOCATIONs
            IF no LOCATIONS vacant
                NOTIFY management

ACCESS EQUIPMENT-FILE
    LIST all EXCESS EQUIPMENT
PRODUCE RESOURCE-DATA-DISPLAY
```

PROCESS NAME: ALLOCATE RESOURCES

PROCESS NUMBER: 1.2.2

PROCESS DESCRIPTION:

UPON RECEIPT of RESOURCE-DATA-DISPLAY

ASSIGN personnel to vacant LOCATION

REDISTRIBUTE excess EQUIPMENT

UPDATE PERSONNEL & EQUIPMENT-FILEs

SUBMIT

PERSONNEL-NOTIFICATION-OF-ASSIGNMENT

RESOURCE-AVAILABILITY-FOR-SCHEDULING

PROCESS NAME: DETERMINE RESOURCE REQUIREMENT

PROCESS NUMBER: 1.3.1

PROCESS DESCRIPTION:

```
    UPON RECEIPT of
        PERSONNEL-AVAILABILITY-FOR-SCHEDULEING
        IF support personnel
            SUBMIT SUPPORT-PERSONNEL-REQUIREMENT
        IF faculty
            UPON RECEIPT of ANNUAL-COURSE-LOAD
            ACCESS COURSE-FILE
                Compare ANNUAL-COURSE-LOAD with courses
                offerred from COURSE-FILE
                    LIST courses required NOT normally
                    offerred
                    LIST courses required normally offerred
                ACCESS RESEARCH-FILE
                    LIST open RESEARCH-ACCOUNTS
                SUBMIT COURSE/RESEARCH-REQUIRED
```

PROCESS NAME: RETRIEVE PERFORMANCE DATA

PROCESS NUMBER: 1.3.2

PROCESS DESCRIPTION:

UPON RECEIPT of

COURSE-JOURNAL

THESIS-REPORTS

STUDENT-OPINION-FORM-STATISTICS

FACULTY-ACTIVITY-REPORT

LOAD data into FACULTY-FILE

SUBMIT

FACULTY-AVAILABILITY-REPORT

PROCESS NAME: INITIATE PERSONNEL SCHEDULE

PROCESS NUMBER: 1.3.3

PROCESS DESCRIPTION:

UPON RECEIPT of

SUPPORT-PERSONNEL-REQUIREMENT

ACCESS SUPPORT-PERSONNEL-WORK-SCHEDULE

ASSIGN SUPPORT-PERSONNEL

UPDATE SUPPORT-PERSONNEL-WORK-SCHEDULE

FACULTY-AVAILABILITY-REPORT

COURSE/RESEARCH-REQUIREMENTS

ACCESS FACULTY-EMPLOYMENT-SCHEDULE-FILE

ASSIGN faculty to

Required COURSE-NUMBER

RESEARCH-QUARTER

SUBMIT

FACULTY-EMPLOYMENT-WORKSHEET

TENTATIVE-FACULTY-SCHEDULE

PROCESS NAME: REVISE-PERSONNEL-SCHEDULE

PROCESS NUMBER: 1.3.4

PROCESS DESCRIPTION:

```
    UPON RECEIPT of
        TENTATIVE-FACULTY-SCHEDULE
        FACULTY-BUDGET
            DETERMINE FUNDING-SOURCE for reimbursable MQ
            REVISE FACULTY-EMPLOYMENT-SCHEDULE, if necessary
                SUBMIT FACULTY-EMPLOYMENT-SCHEDULE to the
                dean of information and policy sciences
                ACCESS COURSE-FILE
                    FOR applicable AY-QTR
                        DISPLAY all COURSE-NUMBERS AND PROF-
                        NAMES
                        REVISE COURSE-FILE, as appropriate

        SUBMIT FACULTY-COURSE-DATA to dean of academic
        administration - scheduler (code 0144)
        SUBMIT TEXTBOOK-ORDER to bookstore (code 48)

UPON RECEIPT of MASTER-SCHEDULE
    VERIFY correct course assignment
        IF ERROR NOTIFY
            scheduler
            curriculum officer
        PREPARE LOCATOR-SCHEDULE for each PROF-NAME

    BI-WEEKLY
        RECEIVE FACULTY-EXCEPTION-REPORT
        SUBMIT WORK-PERFORMED-REPORT
```

PROCESS NAME: PREPARE TIME & JOB ORDER CARDS

PROCESS NUMBER: 1.4.1

PROCESS DESCRIPTION:

```
UPON RECEIPT of WORK-PERFORMED-REPORT from supervisors
    IF FACULTY
        SUBMIT EXCEPTION-REPORT
    FOR EACH civilian of support staff
        SUBMIT TIME-CARD to comptroller department
    FOR personnel chargeable to research account
        SUBMIT RESEARCH-SUPPORT-REPORT
    ELSE
        SUBMIT JOB-ORDER-CARD to comptroller department
```

PROCESS NAME: PREPARE FACULTY CERTIFICATION REPORT

PROCESS NUMBER: 1.4.2

PROCESS DESCRIPTION:

```
UPON RECEIPT of FACULTY-EXCEPTION-REPORT
    FOR EACH FACULTY
        LIST exceptions to FACULTY-EMPLOYMENT-SCHEDULE
        SUBMIT FACULTY-CERTIFICATION-REPORT to director
        of academic planning
```

PROCESS NAME: PREPARE JOB ORDER CHARGE REPORT

PROCESS NUMBER: 1.4.3

PROCESS DESCRIPTION:

UPON RECEIPT of RESEARCH-SUPPORT-REPORT

VERIFY INCLUSIVE-DAYS are charged to COSTC

IF NOT determine FUNDING-SOURCE

LIST FUNDING SOURCE by INCLUSIVE-DATES

SUBMIT corrected JOB-ORDER-CHARGE-REPORT to dean of research

SUBMIT JOB-ORDER-CHARGE-REPORT to dean of research indicating NO CHANGE

PROCESS NAME: PREPARE OVERTIME REQUEST

PROCESS NUMBER: 1.4.4

PROCESS DESCRIPTION:

UPON RECEIPT of SUPERVISOR'S REQUEST

PREPARE OVERTIME-REQUEST

FOR research support personnel

SUBMIT OVERTIME-REQUEST to dean of research

ELSE

SUBMIT to dean of information and policy sciences

PROCESS NAME: RECEIVE FUNDS

PROCESS NUMBER: 2.1

PROCESS DESCRIPTION:

```
    UPON RECEIPT of OPTAR-GRANT
        IF O & MN
            IF start of fiscal year
                ESTABLISH ACCOUNT-BALANCE = 1st QTR target
        ELSE
            BUILD RESEARCH-FILE record with
                COSTC
                ACCOUNT name
            as listed in the OPTAR-GRANT

UPON RECEIPT of STATUS-OF-FUNDS-REPORT
    VERIFY that ACCOUNT-BALANCE increased by OPTAR-GRANT
    amount
        FOR research ACCOUNT
            BUILD RESEARCH-FILE record
                ACCOUNT = DEPTAS
                ACCOUNT-BALANCE = amount listed on
                STATUS-OF-FUNDS-REPORT as indirect costs
                (10% funds)
```

PROCESS NAME: OBLIGATE FUNDS

PROCESS NUMBER: 2.2

PROCESS DESCRIPTION:

```
    UPON RECEIPT of EXPENDITURE-REQUEST
        DETERMINE FUNDING SOURCE
        IF FACULTY-TAD
            SUBMIT TRAVEL-MATTER INQUIRIES to psd, if
            necessary
                travel and per diem rates,
                travel regulation questions
            UPON RECEIPT of INQUIRIES-RESPONSE
                PREPARE TRAVEL-ORDERS
        IF SUPPLIES
            DETERMINE SOURCE-OF-SUPPLY
                IF stocked by supply department
                    PREPARE READY-SUPPLY-STORE-REQUEST
        IF research support staff LABOR-OBLIGATION
            SUBMIT TIME-CARDS to comptroller dept
            VERIFY correct COSTC as shown on
            JOB-ORDER-CHARGES-REPORT
        ESTABLISH transaction in proper ACCOUNT, listing
            DEPT;  CATEGORY-CODE;  ITEM-DESCRIPTION:  STUB-
            NUMBER:  OBLIGATION= ESTIMATED-COST
        OBTAIN AUTHORIZED-SIGNATURE
        FOR charges against research ACCOUNT
            SUBMIT document via research office
            ELSE SUBMIT document to comptroller dept
```

PROCESS NAME: UPDATE OPTAR/RESEARCH ACCOUNTS

PROCESS NUMBER: 2.3.1

PROCESS DESCRIPTION:

UPON RECEIPT of STATUS-OF-FUNDS-REPORT

VERIFY all transactions entered in OPTAR/RESEARCH-FILE since DATE-OF-LAST-UPDATE are listed on the REPORT

IF NOT notify comptroller/research office

FOR all transactions on REPORT with UPDATE-INFO entry

ADD complete transaction to OPTAR/RESEARCH-FILE

IF transactions on REPORT NOT in FILE

NOTIFY comptroller if erroneous

ELSE RECORD complete transaction

DETERMINE posting error cause

SUBMIT FUNDING-DEFICIENCY-REPORT

IF ACCOUNT-BALANCE less than known requirements

IF product of RATIO and TOTAL-FUNDS authorized is greater than ACCOUNT-BALANCE

NOTE: RATIO = (current Julian date)/365

PROCESS NAME: DETERMINE REVISED FUNDING METHOD

PROCESS NUMBER: 2.3.2

PROCESS DESCRIPTION:

```
    UPON RECEIPT of FUNDING-DEFICIENCY-REPORT
        LIST
            all known unfunded requirements
            EXPENDITURE-HISTORY
            IF RESEARCH-FILE ACCOUNT
                LIST all accounts for which
                    PRINCIPLE-INVESTIGATOR is also
                    SECONDARY-INVESTIGATOR
                DETERMINE FUNDING-SOURCE
        IF requirements are necessary before new funding
        is expected
            SUBMIT EMERGENCY-REQUEST
```

PROCESS NAME: SUBMIT UNFUNDED REQUIREMENTS REQUEST

PROCESS NUMBER: 2.4.1

PROCESS DESCRIPTION:

```
UPON RECEIPT of
    EXPENDITURE-HISTORY
    EMERGENCY-REQUEST
DETERMINE FUNDING-SOURCE
    IF RESEARCH-FILE ACCOUNT
        SUBMIT AUGMENTATION-REQUEST to research office
    ELSE
        SUBMIT UNFUNDED-REQUIREMENTS-REQUEST to dean of
            information and policy sciences
```

PROCESS NAME: SUBMIT RESEARCH PROPOSAL

PROCESS NUMBER: 2.4.2

PROCESS DESCRIPTION:

```
UPON RECEIPT of RESEARCH-IDEA
    COMPILE EXPENDITURE-HISTORY of similar projects
    COMPLETE RESEARCH-PROPOSAL
    DETERMINE FUNDING-SOURCE
        IF nps research foundation
            SUBMIT RESEARCH-PROPOSAL to dean of infor-
            mation and policy sciences
        ELSE
            SUBMIT RESEARCH-PROPOSAL to research office
```

PROCESS NAME: SUBMIT BUDGET REQUEST

PROCESS NUMBER: 2.4.3

PROCESS DESCRIPTION:

WHEN REQUESTED

COMPLETE EXPENDITURE-HISTORY

COMPILE new requirements

PROVIDE JUSTIFICATION for necessary ITEMS

SUBMIT BUDGET-REQUEST to dean of information and policy sciences

---

PROCESS NAME: ACQUIRE PROPERTY

PROCESS NUMBER: 3.1

PROCESS DESCRIPTION:

```
FOR EACH MATERIAL-RECEIPT-DOCUMENT
    VERIFY that PROPERTY was requisitioned by DEPT
    VERIFY that document data EQUALS PROPERTY
    IF DISCREPANCY exists NOTIFY supply department
    OTHERWISE
        IF PROPERTY EQUALS EQUIPMENT
            BUILD EQUIPMENT-FILE record
            ASSIGN LOCATION
            IF EQUIPMENT has PLANT-ACCOUNT-NO
                NOTIFY comptroller department
            MOVE EQUIPMENT to LOCATION
        IF PROPERTY EQUALS SUPPLIES
            ACCESS SUPPLIES-FILE
            INCREMENT DEMAND by QUANTITY received
            MOVE SUPPLIES to the vault
        IF PROPERTY EQUALS DIRECT-TURNOVER(DTO)
            MOVE DTO to PROF

        IN ANY CASE

            ACCESS OPTAR-RESEARCH-ACCOUNT-FILE
            STATUS = "RECEIVED" + DATE
            FILE MATERIAL-RECEIPT-DOCUMENT
```

PROCESS NAME: MODIFY SPACE/EQUIPMENT

PROCESS NUMBER: 3.2.1

PROCESS DESCRIPTION:

UPON receipt of MANAGEMENT-DIRECTION

SUBMIT WORK-REQUEST to public works department

to MOVE EQUIPMENT to a different LOCATION,

to MODIFY LOCATION physical characteristics.

THEN RECORD WORK-REQUEST-NUMBER and -DATE in

SPACE-FILE

UPON COMPLETION of work

IF EQUIPMENT

RECORD new LOCATION in EQUIPMENT-FILE

IF SPACE modification

RECORD new data in SPACE-FILE

IN ANY CASE

RECORD COMPLETION of work request in SPACE-FILE

PROCESS NAME: PRODUCE REPORTS

PROCESS NUMBER: 3.2.2

PROCESS DESCRIPTION:

QUARTERLY

ACCESS SPACE-FILE for all work orders

WHERE STATUS NOT EQUAL COMPLETE

REQUEST STATUS from public works department

ANNUALLY

RETRIEVE from EQUIPMENT-FILE all data for

LABOR-SAVINGS-DEVICE-REPORT

VERIFY EQUIPMENT

NOMENCLATURE
MAKE/MODEL
PLANT-ACCOUNT-NO (if applicable)
SERIAL-NO
LOCATION

CORRECT EQUIPMENT-FILE, if necessary

SUBMIT report to supply department

RETRIEVE from SPACE-FILE all data for

SPACE-UTILIZATION-REPORT

VERIFY LOCATION WITH

occupant (EMPLOYEE-NUMBER)
USE
TELEPHONE-NUMBER
all EQUIPMENT

PROCESS NAME: PRODUCE REPORTS, contd

PROCESS NUMBER: 3.2.2, contd

PROCESS DESCRIPTION:

CORRECT SPACE/EUIPMENT-FILES, if necessary

SUBMIT report to public works officer

TRI-ENNIENALLY

RETRIEVE from EQUIPMENT-FILE for

PLANT-ACCOUNT-REPORT

VERIFY PLANT-ACCOUNT-NO with

NOMENCLATURE
MAKE/MODEL
SERIAL-NO
LOCATION

CORRECT EQUIPMENT-FILE if necessary

SUBMIT report to comptroller department

PROCESS NAME: DISPOSE OF PROPERTY

PROCESS NUMBER: 3.3

PROCESS DESCRIPTION:

```
    UPON RECEIPT of DISPOSAL-REQUEST
        RETRIEVE EQUIPMENT record from EQUIPMENT-FILE
            IF UNFUNDED-REQUIREMENT exists
                NOTIFY MANAGEMENT
            IF NO UNFUNDED-REQUIREMENT
                NOTIFY FACULTY/STAFF of excess EQUIPMENT
            IF NO CLAIMANTS
                SUBMIT MATERIAL-TURN-IN-REQUEST to supply
                dept

        IN ANY CASE
            UPON EQUIPMENT movement
            CHANGE EQUIPMENT-FILE accordingly
```

FOOTNOTES

CHAPTER I.

[1]Information is commonly defined as data used in decision making.

[2]Throughout this work, the view of the data/information is that of a flow throughout a network.

CHAPTER II.

[3]The term "user" will be used throughout this narrative as either singular or plural, but can be roughly translated as "worker".

[4]Physical, in this context, means the description of the physical flow, normally in terms of ADP hardware processing.

[5]DeMarco classifies users as hands-on users, responsible users, and system owners.

[6]For the initiated reader, this was an unplanned example within an example.

[7]That does not rule out the possibility that the "new" system may not be cost-effective and, therefore, not implemented.

[8]The traditional, un-wieldy, error-prone document associated with the "old-style" of analysis was named the Functional Specification. The name change is to indicate a substantial change in the analysis output format rather than any substantial functional change.

[9]If necessary to obtain agreement, the analyst must be prepared to start over, re-partitioning, if required, until the analyst——not the user——has the correct perspective.

[10]The system design person will be discussed later in this chapter.

[11]The number of iterations can be shown in the form of sub/superscripts, or with numbers before/after the braces to indicate the lower and upper limits, respectively.

[12]DeMarco suggests that the analyst debrief the user(s) at various stages of the analysis by "walking-through" the Data Flow Diagrams and their associated details.

[13]Because of time constraints, this author did not define this study to include the New Physical Data Flow nor the Systems Specifications.

CHAPTER III.

[14]For each decomposition of a process, the resultant components are depicted pictorially at a lower "level"—thus the term for the decompositioning has been adapted by DeMarco as "leveling."

[15]If all the decompositions of all the levels are summed, then to coin a new word, the top level is the "de-partitioned" view of the system.

[16]A data "sink" is a technical term in Network Theory. The reader should translate it as "destination."

[17]Usually, "unplanned" is a quality that can be attributed to the requestor.

[18]At this point, the author also chooses to make a major departure from DeMarco's technique. Because of the close-knit organization of the Department, there was not much difference between the current Physical Data Flow and the current logical Data Flow (see Chapter II). The Physical Data Flows were essentially ignored.

[19]A particular box code may appear more than once, but that is just an effort to avoid confusion from crossing lines.

[20]At the time of commencing the analysis, many of the files were loosely organized, non-existent, or only conceptual.

[21]A reminder—the decision to mechanize all the data stores, or not, need not be made now.

[22]See above Note 21.

CHAPTER IV.

[23]The general rule of thumb is that the analyst should only show seven, or less, "bubbles", or operations, on any Data Flow Diagram.

[24]The reader must be able to absorb the sense of the flow. Flows that continue on to additional pages disrupt the thought process.

CHAPTER V.

[25]The files are described rather than defined. The alpha-numeric characteristics of each element may be deferred until the design phase.

[26]VFW, San Francisco, 1981.

[27]Data elements are in alphabetical order. New data elements defined subsequently to this study may be inserted in alphabetical order.

[28]Winston Churchill is quoted, replying to an aide's correction of Churchill's sentence which ended with a preposition, "This is the type of nonsense up with which I shall not put."

CHAPTER VI.

[29]The difference between a file and a database is that a file can only be accessed by the way it is ordered. A database can be accessed by other keys as well.

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